

CAPABILITY IN DECLINE: A HISTORICAL ANALYSIS OF THE POST-WORLD  
WAR II DEGRADATION OF DOMESTIC RAILROADS AND  
THE IMPACT ON THE UNITED STATES MILITARY

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Military History

by

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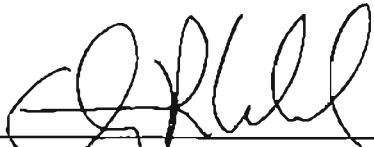
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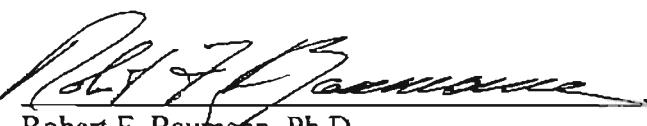
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## ABSTRACT

### CAPABILITY IN DECLINE: A HISTORICAL ANALYSIS OF THE POST-WORLD WAR II DEGRADATION OF DOMESTIC RAILROADS AND THE IMPACT ON THE UNITED STATES MILITARY, by James L. Evenson, 108 pages.

The purpose of this thesis was to explore the risks associated with changes in United States military capabilities relative to the decline and recovery of the post-World War II domestic railroad industry. Since 1946, the commercial railroads of the United States witnessed numerous mergers, bankruptcies, and abandonment of routes that contributed to the continued shrinking of the domestic rail network and associated service.

Accentuated by the dynamic environment of various competitive forms of transport, government regulation, and other rail-based commerce, the capability of the railroads to support military requirements declined along with the railroad industry well into the 1970s. This degradation has roots in the organization, infrastructure, and capital equipment of the railroads as well as the military, with heavy influence by various governmental and competitive forces. While the railroads of the twenty-first century have since fully recovered from their difficult economic times, the rail support for the military has not, despite its strategic importance to the country. This paper examined the forces at work since World War II and offered recommendations to lower the risk for the military to employ the domestic railroad industry effectively in 2006 and beyond.

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## ACRONYMS

CONUS	Continental United States
NATO	North Atlantic Treaty Organization
SDDC	Surface Deployment and Distribution Command
STB	Surface Transportation Board
STRACNET	Strategic Rail Corridor Network
US	United States

## CHAPTER I

### INTRODUCTION

The purpose of this thesis is to examine the changes in capability of the domestic railroads since World War II with regard to United States military. The United States military and those of other countries have employed railroads since their invention in the early nineteenth century. Carrying troops and supplies for war was a lucrative business in many parts of the world. In the United States, railroads have directly supported war efforts in many forms, from moving men in Civil War campaigns, to materials to ports during the Spanish-American War. As the Industrial Revolution swept the world, the nature of railroads changed to become a larger part of life as more people and goods in the United States moved on rails farther than ever before. By 1916, the network in the United States had peaked. So began the decline of the domestic United States railroad industry as it sought to strike a profitable equilibrium with the various markets it served. One of these markets included the United States military, and the service rendered was in both peacetime and war.

With the advent of World War I, the domestic railroads of the United States faced an unprecedented challenge to support the war effort even as the rail industry began to shrink. The mixed success of the World War I effort saw the winning of the war at the expense of the government intervening in the running of the industry. The railroad industry hobbled through the 1920s only to see a further downsizing by the economic contraction of the Depression. The economic activities of the late 1930s, in conjunction with the economic expansion attributed to the war clouds in Europe, set the stage for the relatively stellar performance of the railroads in World War II.

Compared to World War I, the domestic railroads performed very well during World War II. With less personnel, track, and equipment, the United States railroad industry moved more people and materiel in support of the second world war than it had during the first. The industry also remained mostly under the control of the civilian railroad managers. Railroad operations saw less congestion given the two-front nature of the conflict compared with the East Coast port traffic jams of World War I. Relatively speaking, 1941 to 1945 marked the high-water mark of the industry with regard to support to the United States military.

Since World War II, domestic railroad capabilities in support of the United States military have declined. Rail infrastructure supporting the military bases and stations has degraded in both quality and capacity. Additionally, rail equipment required to support the military has also decreased in numbers and type. The corporate memory of the overall workforce now in place, both civilian and military, has faded with regard to rail operations in support of the Department of Defense. Given these conditions, the United States military is assuming some risk of logistical atrophy with regard to the abilities to move people and equipment by rail in the event of a significant mobilization. The intent of this thesis is to research and qualify this risk from these various perspectives by specifically answering the question: What risk is the United States military assuming with the post-World War II degradation of its domestic railroad capabilities?

At the end of World War II, the United States was on the eve of one of the largest demobilizations ever. The lifeblood of the successful American military was the logistics operations of the country, now poised to transition to more peaceful activities. The men, machines, and lines of communication operated upon took many forms: trucks on roads,

ships on water, planes in the air, and trains on rails. This thesis will examine the last of these transportation forms to understand better the changes that occurred since 1946 until 2006, and will attempt to articulate what risks the United States military may now be facing given the changes of the domestic rail capabilities over the past sixty years. This thesis will also describe chronologically the events, conditions, organizations, and other elements that contributed to the change in capability.

To help analyze the effectiveness of military capabilities with regard to the domestic rail industry, this thesis will refer to various commercial and governmental entities and activities. To understand what these rail capabilities mean, one has to examine the institutions, the infrastructure, and the capital equipment involved in different events over time. These tangible entities drive the operations under constraints imposed by the government and business. At the end of World War II, railroad operations in the United States were very operationally effective. What would become of those operations in the coming decades? What drove those changes? To answer these questions, this thesis will examine the state of the railroad industry, the infrastructure involved, and the capital equipment present beginning in 1946 to provide a historical perspective. The paper will conduct an examination of the circumstances that produced changes in these entities in the intervening years to include developments in government, in commerce, and in technology. The three main chapters of this thesis each roughly define some transition periods as the capabilities changed from what they were in 1946 to what they have become in 2006. As part of this examination, an evaluation of conditions in institutions, infrastructure and capital equipment, interwoven through the chronology

of each period, will set the stage for an overall risk assessment of each period based on the supporting evidence.

From a more detailed perspective, the thesis will concentrate on the specific institutions, infrastructure, and capital equipment that affect military capability in order to provide a framework for the chronology. Certainly, some changes in these entities may have no bearing on the military, but are still significant to the railroads. To the extent possible, excluded from this paper are significant railroad-related events that are historically interesting, but have no impact on the military. An example of just such event might include an infrastructure-related example with the introduction of concrete ties in lieu of wood for laying track during the period under examination. Certainly, this innovation is important to some in the railroad industry, but the event itself does not correlate to any change in military capability. Likewise, not all changes in the military altered the capability to employ railroads.

This paper will review various events associated with domestic rail-related organizations, both civilian and military. The examination will include considerations such as the law, the institutions involved, and the differences in available human resources that occurred between 1946 and 2006. The study will also consider the types of institutions required to provide rail services, both on and off military installations, and the impact that technology has played in the railroad operations equation. Finally, the thesis will attempt to identify any trends or implications relative to organizations that may present a concern for the military with regard to rail operations in support of national security.

An examination of the domestic railroad infrastructure over this sixty-year period will include all aspects of the railroad physical plant required to operate freight and passenger trains. The thesis will examine the health of the infrastructure in 1946 and attempt to describe the distinct changes that occurred to the railroads in intervening years as the highway and airport systems flourished. Special focus will be on the role that infrastructure plays in support of United States domestic military bases, stations, and seaports, both civilian and domestic. The thesis will also attempt to identify examples of alternative infrastructure that the military might find employable, such as civilian team tracks and jury-rigged loading ramps at ports, to assess completely the changes in logistics capabilities. The paper will conclude by attempting to isolate any points of implied risk presented by changes in infrastructure through an examination of the way commerce has changed since 1946 until present day in 2006.

As technology changes, so does the capability of the domestic railroads and their support of customers. The railroad equipment that helped win World War II is very different from the trains that roam the rails today. The amount of equipment available in 1946 was also significantly greater than that which is available in 2006. These conditions imply change not just in capability, but also in capacity. The thesis will examine the role of capital equipment, innovation in the rail industry, the functions provided, and the implications of supply and demand of rolling stock in support of military operations during the past six decades.

In summary, this thesis will attempt to articulate over three chapters how the institutions, the infrastructure, and the capital equipment have changed since 1946 in direct support of businesses in general. At the end of each chapter, the paper will attempt

to derive the implications for the United States military to include examining specific events that have occurred in each of the three 20-year periods in question. These chapter summaries will also attempt to address the preceding events described as they relate to specific changes in railroad-related institutions, infrastructure, and capital equipment since 1946 in order to identify and understand the implications for the military in 2006 and beyond. Finally, this paper will conclude by documenting the risks assumed by the military given the changes identified in domestic rail capabilities and, then, offering recommendations to address these risks.

## CHAPTER 2

### 1946–1965: FROM PEAK TO PLUMMET

#### Overview

The purpose of this chapter is to review the various changes that have altered the domestic rail capabilities of the United States since 1946 until approximately 1965.

Events during this period involve institutions, such as the North American railroad companies, Congress, the military services, and the Department of Defense including its predecessors and subordinate agencies. The changes in question affected the infrastructure these organizations relied upon, as well as the equipment that ultimately provided the military conveyance. This chapter will neither examine the entire history of any one particular railroad nor the rail industry in general over the twenty years. Rather, the analysis will attempt to cite examples of action or inaction across the different organizations, to include changes in infrastructure and equipment, which contributed to an aggregate decrease of domestic rail capabilities during this period. Written as a topical chronology, the interactions between the various groups and the sequence of events related to the railroad plant and equipment are important to understanding the dynamics of the capabilities over time.

In the years since the end of World War II, numerous railroads have abandoned lines, merged, or declared bankruptcy. In some of these events, organized labor played a significant role in the success or failure of the railroad company either through contract negotiations or through strikes. While these corporate events played out, the United States military services and joint executive agencies have been party to the proceedings in a variety of ways. The total history of the United States military includes periods

where the government directed the military to have service members manage the railroads nationally such as a brief period during World War II.<sup>1</sup> Military assignments have also included running a particular railroad in the interest of the government such as the Chicago, Rock Island and Pacific Railroad during the Korean War.<sup>2</sup> In still other instances, railroad managers cited the requirements of national defense as an important tenet with regard to a strike, merger, abandonment, or bankruptcy.<sup>3</sup> This chapter will examine the beginning of the decline in capability and review the events that set the stage for a change in discourse regarding the role of the military with regard to domestic railroads.

Examination of the period in question will be in four parts, each roughly five years in length. These parts include the late 1940s, the early 1950s, the late 1950s, and, finally, the early 1960s. Each of these subsections will describe relevant events with regard to the rapid decline in rail capability that occurred in the twenty years covered. A summary at the end of the chapter will highlight the most significant events in the period and offer an assessment of risk at that point for gauging how capable the military was with regard to employment of the railroads for the next period in question.

The late 1940s saw the high-water mark for military support by the railroad industry. The end of World War II provided ample opportunities for rail use as the industry initially carried returning veterans and goods for export, and, then later, supplies for the ensuing Berlin airlift. The military, though downsizing, still kept an active capability in the form of railway battalions. The end of the first five years saw no significant degradation of means for the use of the railroads by the military.

The early 1950s kept the railroads busy supporting the Korean War. The military during this time also expanded its capability through large purchases of capital equipment. Much of this rolling stock, though, saw little action. Reorganization of the Department of Defense featured prominently during this time as the Korean War highlighted opportunities to consolidate and streamline services. The first five years of the 1950s marked the end of the golden era of American railroading as changes in commerce, the economy, and other factors forced changes on a very reluctant railroad industry.

The late 1950s witnessed the coming of the government-funded interstates and airports. These developments, along with a weak national economy, made for a perfect storm in which some railroads perished. The nature of the rail industry changed faster than the organizations involved. Bankruptcies, mergers, and abandonment occurred frequently as the industry fought off the new competition and the old regulations. The end of this decade served as an example of things to come for the next ten years.

The early 1960s noted continued changes in military capabilities as the Department of Defense continued to refine joint mobility. The rail industry also continued to bleed jobs, routes, and cash. Merger mania prevailed as the solution to the slump. Passenger rail service withered during this time. Freight service in the Northeast began a slow death spiral that continued for years, and threatened the larger national rail network as a whole. The Viet Nam War began to heat up as the military capabilities to employ railroads effectively continued to cool. The end of this five-year snapshot recorded a domestic railroad industry in freefall.

This first twenty-year period began at a peak for the railroad industry and, like a roller coaster, sank quickly. The events to follow 1965 directly responded to the rapidly deteriorating conditions that began to amass in the mid-1950s. The risk to military capability during this time increased in a manner inversely proportional to these declining conditions.

#### The Postwar 1940s: King of the Hill

The end of World War II marked a significant milestone for the railroad industry in the United States. The war was over. The railroads had performed well. More men and materiel had moved from the factories, bases, and forts to the ports in support of the war effort than had during World War I.<sup>4</sup> The railroad industry in the 1940s performed this productive feat with slightly less equipment, infrastructure, and personnel than it had in April 1917.<sup>5</sup> From the end of 1941 and until the beginning of 1946, American railroads accounted for about ninety percent of the domestic materiel movement of the Army and Navy, and provided nearly ninety-seven percent of the domestic movements of American troops.<sup>6</sup>

World War I challenged national railroad operations since the bulk of all freight shipments were heading towards the eastern seaports, causing significant nationwide problems with car and track utilization that threatened the overall war effort.<sup>7</sup> To solve these and other problems related to domestic rail logistics because of World War I, the United States government nationalized the railroads.<sup>8</sup> The railroad industry was able to avoid a similar nationalization effort during World War II. Given that World War II was a two-front, hence, two-coast effort, the railroads worked with the government to maximize car and track utilization and to address other operating issues.<sup>9</sup> The only

government intervention in the railroad industry during World War II was a brief strike period in December 1942 into January 1943.<sup>10</sup> Other than that short period, the railroad industry functioned well and emerged from the war stronger, with lower operating ratios, and more profitable than at any point since the World War I.<sup>11</sup> The year 1946, however, marked the beginning of the end for several of the railroads that had performed so well for the United States during the war. The railroad industry was now under increasing competition for its freight and passenger business from trucks, buses, airplanes, barges, and pipelines. Technological change also began to accelerate with the introduction of diesel locomotives on many railroads, as well as the introduction of centralized traffic control.<sup>12</sup> The effect of such transformations threatened the multitracked empires with change-resistant labor strife and capacity consolidation on fewer routes. Entering the 1950s, railroad historian Richard Saunders noted, "There were already signs of trouble, but there was still hope, and a great sense of pride that this was important work the railroads must do."<sup>13</sup>

During World War II, the capital equipment provided by commercial industry required very little augmentation on the part of the military to support the war effort. As a legacy of that situation, the relatively few freight and passenger railcars procured during World War II were still quite new. Some of specialized equipment designed and manufactured during the war included special troop sleepers, hospital troop, and hospital kitchen cars.<sup>14</sup> After the war, the military slowly withdrew most of these assets and placed them in storage at various Army bases for future mobilization.<sup>15</sup> The remaining freight cars continued in interchange service in support of the peacetime Army and Navy, and in 1947, Air Force. The fleet of boxcars, tank cars, and flatcars continued moving

general freight, ammunition, vehicles, petroleum, and acids required in support of the services. In some cases, the railroads would use the specialized military freight cars and reimburse the Treasury Department for the rental of the equipment.<sup>16</sup> Much of this freight rolling stock, and most of the cars procured in the 1950s, would later form the basis for the joint Defense Freight Railway Interchange Fleet in service by 1960.<sup>17</sup>

From the perspective of the government and the military, in particular, the end of the war brought many lessons. The improvements that resulted from these lessons came in the form of changes to military-related rail operations. Many of the 351,000 railroad employees who went off to war were now returning. Railroad historian John Stover noted that, of these men and women, more than a tenth of this number served in the Military Railway Service as members of battalions and other railway-related units under the Transportation Corps of the United States Army.<sup>18</sup> As a result of the former relationship these people had with the civilian railroads, the Army noted in an official history “the Military Railway Service units exhibited a high degree of technical competence” in the performance of their duties during the war.<sup>19</sup> With the demobilization of the military, the reduction of the Transportation Corps to peacetime levels was underway; however, changes in missions for the Transportation Corps resulting from the lessons learned during the war were also in progress. These changes resulted in significant increases in responsibilities in the fields of land transportation and traffic management for the Transportation Corps. One of the most significant activities that resulted from the postwar changes included the management and movement of a large volume of foreign-aid materials under various relief and rehabilitation efforts, most notably the Berlin Airlift of 1948 and 1949.<sup>20</sup> This effort required considerable coordination among rail,

road, sea, and air components of the United States military. By the end of the decade, the number of peacetime Transportation Corps personnel in the United States proper numbered about 14,000, and the mission of the Corps itself was much different than it was just five years prior.<sup>21</sup> On the corporate side of the equation, while the capability and capacity to support large rail movements remained, sown were the seeds of competition, particularly with trucks for moving freight.<sup>22</sup>

#### The Early 1950s: Preparing to Fight the Last War

The outbreak of war in Korea on 25 June 1950 marked the beginning of a decade that would drastically alter the domestic rail capabilities of America. According to a written history of the Transportation Corps of the United States Army, within three days of the outbreak of hostilities in Korea, this important unit, organized years before as a temporary one, was “recognized and despite pressures to the contrary, . . . granted permanent status.”<sup>23</sup> The temporary unit status was a remnant of World War II when the War Department task-organized functional departments in support of the war effort then underway. While the military recognized the need to formalize the transportation organization to support the Korean conflict, American commercial railroads required relatively little preparation and were not over-stressed to support the effort. The postwar capabilities of corporate America remained largely intact, and these resources continued to support the large demands of the Far East Command.<sup>24</sup> Further, the United States Army even noted in the same historical piece,

There was a possibility of the extension of the Korean conflict into a general war. It was therefore necessary to build up this nation’s mobilization potential, to develop or expand our oversea [sic] bases worldwide and to strengthen the ability of our Allies to resist Communist aggression. Under the prevailing philosophy of

a “limited emergency,” these tasks had to be accomplished *with minimum impact on this nation’s economy* [emphasis mine].<sup>25</sup>

With the close cooperation of the common carriers, the Transportation Corps required little augmentation of resources to accommodate the increased workloads of the Korean period.

The single largest area of concern during the Korean War was that of a major work stoppage due to labor-management disputes early in the conflict affecting the Chicago, Rock Island and Pacific Railroad (commonly known as just “The Rock Island”). The Rock Island was important because it served key industries and arsenals. The disputes threatened to spread to other lines as striking unions were wont to do; however, the government countered the strike by seizing control of the Rock Island on 25 August 1950 and directing the Army’s Chief of Transportation, Major General Frank A. Heileman, to maintain uninterrupted rail service. Further labor strife led the government to seize another 184 railroads on 27 August 1950. Based on his previous experience, the Chief established a system of regional administration. Through the cooperation of the owners and the labor unions, day-to-day operations remained under existing management with military oversight.<sup>26</sup> According to a written history by the United States Army, in order to provide continued service to various industries important to the war effort, such as steel plants, the military seized additional small lines in January 1951.<sup>27</sup> Furthermore, under the Chief of Transportation,

The seized railway systems were grouped into seven regions, each headed by an Army reserve officer experienced in railway transportation. Sub-regional offices were also set up. Unlike the plan of operation adopted for the previous seizures, Army officers were not assigned to each individual line. *It was possible to do the job with a small, compact staff* [emphasis mine].<sup>28</sup>

The government relinquished control of the 199 railroads in total on 23 May 1952.<sup>29</sup> To note, the manner in which the government ran the seized railroads was significantly different from any of the previous seizures. The involvement of the military was markedly smaller, and the concern by the government for the civilian economy noticeably larger. As one will see, this early 1950s seizure marked the last time the government would use any of its military capabilities to seize and run a domestic commercial railroad.

One of the most significant military capability developments of the Korean War was the procurement of additional military railroad equipment for use in the United States and Korea. Despite meeting the domestic movement requirements for the war effort with resources at hand, the Department of Defense professed to have requirements for rail-related capabilities similar to those needed in World War II and further cited urgent needs in Korea proper. Based on this expectation, the United States military services, with the Army in particular, embarked on a series of contracts involving obligations in excess of \$60,000,000 to procure freight cars, passenger cars, diesel-electric locomotives, and work train locomotive cranes. Rolling stock accounted for over ninety percent of the total buy.<sup>30</sup>

Beyond the newer and generally available commercial rolling stock employed for military movements, the military-owned railroad equipment used at first to support the war effort in Korea was World War II vintage or older. Dusted off were the engineering plans for the construction of military specification railcars, drawn during the mid-1940s. With contracts issued in 1951 and 1952 for 8,600 pieces of equipment, most of the assets arrived just in time for the armistice. These off-the-shelf purchases included 341 engines

and 50 cranes with only minor modifications related to military specifications. An official history of Transportation Corps Railway Fleet noted,

With the exception of 63 hospital cars and 89 troop kitchen cars, additional Zone of the Interior [continental United States] procurement of passenger equipment proved unnecessary. To provide for peak equipment, arrangements were made [by the United States Army] with the Pullman Company to store a standby fleet of tourist cars on Army trackage. In practice, however, regular Pullman equipment and *increased use of air transport proved adequate for CONUS troop movements* [emphasis mine].<sup>31</sup>

To what extent this unneeded over-procurement affected the reorganization that occurred in the Transportation Corps in 1953 is uncertain; however, the realignment of responsibilities for "technical and operating functions relating to requirements, procurement, supply distribution, and organizational and field maintenance" soon fell to the newly established Transportation Material Command according to the same historical reference.<sup>32</sup> All of this purchasing of new equipment for use in the United States and abroad peaked in 1955 with a worldwide fleet of 17,781 railcars and locomotives. Of this total, the continental United States boasted 14,994 pieces in active use and in war reserve storage.<sup>33</sup>

#### The Late 1950s: A Transportation Paradigm Shift

Following the Korean War, the most significant change in the capabilities of domestic railroads resulted directly from federal legislation. Of particular interest to railroads was an act related to building interstate highways. This new highway system would help trucking companies directly compete with the railroads. About half of the paved roads of the United States were improved highways at the end of World War II.<sup>34</sup> Motor freight carriers were now common with their trucks at loading docks, providing door-to-door service, from supplier to customer, without switching delays. Trucks also

accepted less than full loads from multiple customers or provided multiple customers with less than a truckload of goods, something the railroads were unable to provide with their less flexible railcars. The truckers, driving the ever-expanding concrete right-of-way, paid a gasoline tax, but no property taxes for those roads.<sup>35</sup> The railroads, on the other hand, paid taxes on their right-of-ways and the fuel taxes for operations. On 29 June 1956, President Dwight D. Eisenhower, who as a young lieutenant after World War I tested the American roads with military convoys under General John J. Pershing, signed the Federal-Aid Highway Act.<sup>36</sup> This act created the created the National System of Interstate and Defense Highways. Presented as a military requirement, General Lucius Clay, hero of the Berlin airlift, chaired the group that outlined the plan for the creation of the interstates.<sup>37</sup> This legislation would forever alter the freight transportation landscape and would set in motion the economic forces that would destabilize the American railroad industry for several decades.

While the interstate highway legislation was still under development, the Department of Defense reorganized United States Army Transportation Corps. As background, the National Security Act of 1947 proposed unification of many forms in the armed forces. One subject of particular interest was the area of supplies and services. The services of concern included rail transportation. Some believed then that the separate supply organizations of the Army and Navy wastefully duplicated one another. Including the Air Force in this concern only compounded the problem. The armed services themselves expressed no particular interest in integrating their support organizations, citing the loss of command and control of their logistics. By the early 1950s, unity of command was the single largest reason to oppose any proposals to unify the supply and

service functions of the service. Congress and the business world had other ideas. Under constant pressure to integrate, the Department of Defense moved towards increased coordination and integration in the areas of logistics, in particular service supply systems. The Security Act of 1947 gave the Secretary of Defense considerable leeway to reduce redundancy in the services. In the 1950s, an effort to eliminate and reduce duplication and create a coordination authority for transportation emerged.<sup>38</sup>

Based on these previous efforts in supply system consolidation, the Department of Defense took action. Ordering the integration of transportation services, the Department of Defense issued Directive number 5160.14, dated 1 May 1956.<sup>39</sup> This directive established the Military Traffic Management Agency under the United States Army Chief of Transportation.<sup>40</sup> The purpose and objectives of the directive included:

provide the most effective and economical freight and passenger transportation service for the Armed Services from commercial transportation companies[,] . . . eliminate duplication and overlapping effort between and among military departments[, and] . . . apply the functions of traffic management within the Department of Defense the basic pattern for all organizations performing a multiple-service support mission.<sup>41</sup>

Joint land transportation, as would be included in the United States Transportation Command some twenty plus years later, was thus born. Supply and service integration efforts underway in the late 1940s helped in the creation of this directive and the new Military Traffic Management Agency.

On the commercial passenger front, railroads were facing a dilemma similar to that of the newly legislated interstates with regard to the emerging domestic airline business. Boeing started the 707 airliner in 1954 with a prototype (underwritten by the United States Air Force for development of in-flight refueling capabilities) that flew a

coast-to-coast test run on 16 October 1955. By October 1957, Pan American Airlines offered public domestic service between Washington, DC, and Seattle.<sup>42</sup> With cities building airports at public expense, and the federal government paying for air traffic control with taxpayer monies, the railroads remained burdened with creating and maintaining rail-related infrastructure and plants on a taxable basis. Money-losing passenger services between heavily taxed stations that no longer attracted the public meant that the monetary losses to the financial bottom lines soon mounted for most carriers of rail passenger.<sup>43</sup>

With the freight and passenger business changing rapidly, the first significant railroad abandonment occurred in 1957. The New York, Ontario, and Western (O&W) was a northeast common carrier serving New York and Pennsylvania. According to historian Richard Saunders, politicians in the state of New York had hoped that the railroad "might be declared essential to national defense," with "rumors circulated along the line that the *civil defense* department" would keep the railroad alive. No such group existed nor would any such funding be forthcoming.<sup>44</sup> The next railroad that started to fall in the late 1950s was the Rutland Railway, serving rural Vermont and New York. Though bankruptcy was not officially declared until 25 September 1961, the fatal damage to the railroad came as the result of labor unrest that began after a slightly profitable 1957. At the time, Senator George D. Aiken of Vermont asked the Pentagon, if the Rutland was in any way essential for the national defense. The answer was no; it had handled only 75 cars of government cargo in its last year of operation, and all but 12 of them could have been rerouted. The 12 cars had carried Vermont marble for monuments and tombstones.<sup>45</sup>

The Rutland was soon gone. Others, like the Lehigh and New England (L&NE), soon followed as other industries, like coal mining, struggled with the aftereffects of the 1957 recession.<sup>46</sup> The northeast United States was particularly hard hit.

Within less than a year, railroads felt the serious effects of this economic downturn. Most major railroads recorded reduced car-loadings, a freight-handling measurement of performance. High fixed costs began to eat away at marginal revenue, which affected net earnings of the companies. The return on investment for the railroads plummeted below what it cost to borrow money, essentially starving the railroads of the funds needed to maintain their fixed plants and rights-of-way. A slow death of some poorly managed railroads was underway. The federal government responded with the Transportation Act of 1958 which, according to historian Saunders, addressed some “peripheral problems of rate making, credit, and passenger service,” but which failed “to deal with fundamentals.”<sup>47</sup> The most significant outcome relative to military capabilities was that the Transportation Act of 1958 provided the Interstate Commerce Commission with jurisdiction over all intercity passenger train discontinuances.<sup>48</sup> With this change, railroads began to shed passenger trains at an alarming rate. Trains were discontinued and stations closed as fast as labor agreements would allow, so that by early 1959, “at least eleven Class I railroads had no passenger service at all.”<sup>49</sup> For the Department of Defense, the days of the military troop movement via commercial rail had begun to end.

In 1958, the Military Traffic Management Agency exercised a mandate of its charter directive to “control and operate military owned railway rolling stock registered for interchange service other than that permanently assigned to intra-base or intra-plant operations.” For the services, this assigned over 6,000 individual pieces of rolling stock

designated for interchange. An official Department of the Army publication titled, "The Transportation Corps Railway Fleet" described this equipment as follows,

The equipment included 4,187 tank cars (3,949 Army, 238 Navy), 914 [flatcars] (903 Army, 11 Navy), 925 Navy damage-free [boxcars], 6 Navy gondola and 5 hopper cars, and 17 well cars (10 Army, 7 Navy). A total of 7,389 [rail] cars were assigned to intra-installation use and were, therefore, not subject to MTMA [Military Traffic Management Agency] control. The [rail] cars assigned to the interchange fleet were of the type not normally furnished to shippers by the commercial railroad industry, and they were considered necessary to meet current and mobilization requirements.<sup>50</sup>

Initially, the Navy refused to acknowledge the control and operational aspects of this arrangement. With guidance from the Office of the Secretary of Defense, the Navy reconsidered its position and later agreed to subject its interchange rolling stock to the operational control of the Military Traffic Management Agency.<sup>51</sup>

During fiscal year 1960, the Military Traffic Management Agency achieved two major developments with regard to the Defense Freight Railway Interchange Fleet. First, this fleet of freight cars, used in interchange service to support the military services by moving everything from ammunition to petroleum, became a self-sustaining financial operation under the Department of Defense. Secondly, the Army and Navy began pooling their railcars under control of the Military Traffic Management Agency for common use by all of the military services. These developments allowed the Military Traffic Management Agency to consolidate management activities and provide the military services with better support.<sup>52</sup>

To support this new financial arrangement for the Defense Freight Railway Interchange Fleet, the Department of Defense established the "Army Management Fund – Interchange Fleet" on 1 July 1959 to ensure a flow of money for maintenance and

operations of the entire military freight railcar fleet, rather than as miscellaneous deposits to the United States Treasury Department.<sup>53</sup> This mechanism accounted for the mileage payments received by the railroads for use of the specialized military freight cars (such as heavy-duty flatcars), for the rental receipts from commercial entities for similar equipment use, and for the damage assessments levied when military freight cars suffered damage during interchange. All of this income became funding for maintenance and repair of the fleet, as well as a source of money to pay mileage charges and rent for commercial freight cars when demand by the services exceeded the supply in the railcar fleet.<sup>54</sup>

The interservice agreement negotiated by the Military Traffic Management Agency finally brought the interchange freight railcar fleet of the United States Navy (and by extension, the United States Marine Corps) under the same operational control with the Army and Air Force. This agreement took effect on 1 November 1959. An official history of the United States Army Transportation Corps Railway Fleet noted,

Integration of the Navy's 1,186 cars with the Army's 4,692 cars thus provided the shipper services with a common pool of 5,878 [pieces] of specialized equipment. Such pooling produced more effective service and added loaded car revenue to the fleet. With the changeover to MTMA [Military Transportation Management Agency] control of the entire DOD [Department of Defense] fleet, operations and maintenance gathered momentum.<sup>55</sup>

Of the 5,878 railcars available at the time, 4,745 railcars stood ready to use. By the end of the fiscal year, the fleet had generated receipts of \$1,423,698 and expended \$1,290,682, mostly in maintenance expenses.<sup>56</sup> The pooling arrangement established a means for the military freight railcar fleet to sustain itself marginally at least for the near term.

Though freight cars accounted for the majority of the Department of Defense rolling stock, some passenger railcar equipment remained on the military rolls. By the end of 1959, less than 500 pieces of passenger equipment remained. Almost 200 of these cars, configured for troop movement, contained kitchens and bunks. The remainder included variations of hospital cars (187), ambulance cars (63), mortuary cars (53), prison cars (2), and guard cars (3). In addition to these assets, the Army Transportation Corps in 1959 leased 500 air-conditioned sleeping cars from the Pullman Company, down from 1,487 sleepers in 1958. These cars, placed in storage at Army installations all over the United States, provided the Department of Defense a ready pool for surge capability.<sup>57</sup> Few ever served in their planned role.

For the commercial railroad industry, 1959 marked the beginning of a period of decline for domestic rail capabilities that would not soon be over. Passenger and freight traffic were falling in all rail categories. Mechanical productivity gains were minimal, despite the introduction of new diesel locomotive power in the early half of the decade on many railroads, due to increasingly worn-out tracks and rolling stock. Labor productivity was another issue that would require a national strike to address. A report prepared for the United States House of Representatives in 1959 concluded that the railroads were not ready to meet the needs for mobilization in the event of war. The report further stated that the railroads would be better prepared if they rid themselves of branch and duplicate lines and invested in their main lines much like the Soviet Union.<sup>58</sup> For the armed services, the reorganization of the Transportation Corps under the Military Traffic Management Agency centralized the management of military traffic movements across the shrinking rail network; however, the question now posed in the military schoolhouses was of rail

transportation adequacy. At least one thesis written at the Army War College in late 1959 and published in early 1960 concluded that the rail capacity required to support a military mobilization like World War II no longer existed.<sup>59</sup>

### The Early 1960s: Noticeable Changes

Lieutenant Colonel Samuel C. McAdams from the United States Army Transportation Corps was one of the first officers to write about the question of adequacy of the United States railroads in the event of war.<sup>60</sup> The timing of his insight into the growing concern over the declining capacity of the railroad industry to carry freight and passengers was prescient. By 1960, the railroad industry was in trouble. The effects of freight competition, the economy of the late 1950s, and the overall poor financial performance did little to improve the deferred maintenance, passenger losses, and ongoing labor strife of the railroads. McAdams noted that, “The decline in railroad revenue which the railroads have experienced in the past few years may limit their capacity and capability in the future.”<sup>61</sup> His perception about the peacetime railroads could not have been more exact.

As various railroads began to explore ways to become more profitable, several began to explore mergers. The merger trend, which began in 1955, was in full swing by 1960. Several railroads proposed mergers to the Interstate Commerce Commission during this time. Congress legally charged the Interstate Commerce Commission, under the Transportation Act of 1920 and the Transportation Act of 1940, to perform a number of duties, one of which was the assessment and approval of proposed mergers. The Interstate Commerce Commission would retain this function until 1996.<sup>62</sup> In justifying the merits of merging, or consolidating, as the railroad companies would sometimes

describe the process, interested parties would file their support or objections with the Interstate Commerce Commission. Such was the forum for national defense arguments in merger cases, and, in 1960, many greeted merging as the solution to nearly all railroad issues.

The circumstances in the mid to late 1950s made the early 1960s busy with consolidation activities. Arguments about the issues related to national defense were common. One of the earlier postwar mergers was between the Erie Railroad and the Delaware, Lackawanna, and Western Railroad. The newly named Erie Lackawanna Railroad (EL) received approval from the Interstate Commerce Commission to merge in late 1959 despite stated public concerns regarding national defense. Prior to Interstate Commerce Commission approval in this case, small businesses of the city of Elmira, New York, opposed the merging lines on the basis that the new railroad would increase traffic on one of the two lines coming through town. (These groups logically assumed that the EL determined the other line as surplus and subsequently abandoned it in order to concentrate traffic and maintenance on only one line.) The business people were concerned about the total number of trains that the consolidated railroad would run through the town. The railroad replied that the number of trains would be less than the two former railroads combined. This number, the railroads further explained, would still be even less than the number of trains handled by either line during World War II. “What if there was another war,” the businesses asked, implying a surge in wartime traffic would threaten the tranquility of the town.<sup>63</sup> “No problem,” replied the railroad, without much elaboration. Still other opponents cited their concern to the Interstate Commerce Commission that “all the railroads that have been taken up” was a national defense issue

and should preclude the merger.<sup>64</sup> The argument failed to sway the commissioners. Such was the back and forth between parties in Interstate Commerce Commission hearings where national defense was often cited. The Erie Lackawanna Railroad spent the better part of the 1960s trying to run profitable trains through Elmira and other towns in the northeast, but success was limited.

At about this same time in the early sixties, the study of railroading and the nuclear age emerged as a topic of analysis in the military colleges. One such study emerged from the Air University, Command and Staff College, titled simply "United States' Railroads and National Defense" by Major Robert L. Rascoe, United States Air Force. In his report of 7 May 1962, Rascoe examined the then-present state of transportation in the United States, as well as the requirements for domestic railroads under conventional and nuclear war. He concluded that the domestic railroads "are capable of only limited response and that this capability has been continuously declining due to growing economic difficulties."<sup>65</sup> Rascoe further concluded that the collective capability of the railroads of the United States,

is not adequate to meet national emergency needs and, throughout the remainder of this decade, the capability that does exist can be expected to progressively deteriorate. The existence of capacity beyond that normally needed [in peacetime] – excess capacity – has always been the key to the railroads' ability to respond to emergency requirements. The trend toward reduction of capacity [through mergers] has already been established in the past few years. However, since the population and consumption are continuing to rise, anything short of concerted expansion of rail capacity means that the railroads *cannot be depended upon in any future national emergency* [emphasis mine].<sup>66</sup>

His writing was nothing short of prescient as the mergers and abandonment of lines continued.

With this published prediction of capability demise, another notable merger case with supposed national defense implications arose. With roots from the latter part of the 1950s, the merger of the Baltimore and Ohio Railroad (B&O) with the Chesapeake and Ohio Railway (C&O) submitted before the Interstate Commerce Commission was the case. The date was 22 October 1962, and President John F. Kennedy had just publicly revealed the presence of Soviet missiles in Cuba. The two world superpowers were on the brink of nuclear war. The next day, oral arguments for the proposed C&O-B&O merger were scheduled at the Interstate Commerce Commission. Richard Saunders described the climax of this 1962 merger case best:

Jervis Langdon, now president of the B&O, took the unusual step of delivering his company's summation personally. If we go to war, he said, the men and women of the B&O are ready to do their part, but it was going to be a close call. Just a few more months' deterioration, and the B&O would be too weak to fight a war. Control of the C&O was essential, immediately. The B&O could not survive without the freight cars, the capital improvement, and the financial security of the C&O.<sup>67</sup>

The members of the Interstate Commerce Commission were as frightened on 23 October 1962 as any other American. The fact that this merger could help win what appeared to be an imminent war played favorably with the Interstate Commerce Commission. The members of the Commission clearly believed that they too had a role to play in the war against communism. As such, the commissioners approved the C&O-B&O merger on 17 December 1962.<sup>68</sup> A similar national defense rationale for the wartime essentiality of railroads was cited in the merger proceedings for the Norfolk and Western Railway (N&W) and the New York, Chicago, and St. Louis Railroad (The Nickel Plate) in 1964.<sup>69</sup>

While consolidation activities continued in the private sector, similar actions were underway in the military. The previously described Military Traffic Management Agency

also underwent some transformation. In 1961, the newly appointed Secretary of Defense, Robert S. McNamara, initiated a study to analyze the problems associated with centralized management of supplies and services to all military departments. The study concluded that the Department of Defense could realize great economy and efficiency by combining supplies and services into a single agency. The resulting organization, established on 1 October 1961, was the Defense Supply Agency, reporting directly to the Secretary of Defense. The Department of Defense then transferred Military Traffic Management Agency to the Defense Supply Agency on 1 January 1962 as a subordinate unit. The new designation for the Military Traffic Management Agency was the Defense Traffic Management Service. The mission of the Defense Traffic Management Service was largely unchanged from that of the Military Traffic Management Agency, specifically, "the effective and economical procurement, use, and control of commercial transportation services required for the movement of cargo and passengers within the [continental United States] for all military services."<sup>70</sup>

The Defense Traffic Management Service became the subject of another detailed study conducted in 1964. This analysis examined the effectiveness of air and ocean terminals. Since railroads were often the means by which cargo and personnel reached these terminals, the resulting designation of the Secretary of the Army as the Single Manager for Military Traffic, Land Transportation and Common-User Ocean Terminals came as no surprise. This designation took effect on 19 November 1964. Under this designation, the Department of Defense activated the Military Traffic Management and Terminal Service on 15 February 1965.<sup>71</sup> The Military Traffic Management and Terminal Service superseded the Defense Traffic Management Service and now controlled all

resources and functions for continental United States land transportation for the United States military.

With the reorganization of the Military Traffic Management and Terminal Service and the new conflict in Viet Nam, the requirements to move personnel and materiel increased. Of many challenges for the Military Traffic Management and Terminal Service, the prospect for the movement of passengers by rail was dim. By 1965, the era of passenger rail was quickly fading, and with it went the capability to move large numbers of troops and their impedimenta in mass. Political and financial concerns precluded mobilization of the specialized military passenger cars in the war reserve. The Transportation Act of 1958 gave the Interstate Commerce Commission jurisdiction over passenger discontinuances that undermined various state public service commissions. Some of these state institutions had long kept unprofitable passenger trains running. With that jurisdiction, numerous railroads sought relief from the passenger business. The Maine Central exited the passenger business entirely in January 1961. The transcontinental Olympian Hiawatha of the Chicago, Milwaukee, St. Paul, and Pacific Railroad (The Milwaukee Road) made a final run on 22 May 1961. The Military Traffic Management and Terminal Service would be hard pressed to find reliable, timely long-distance passenger rail service in the latter half of the 1960s and beyond.

To understand the decline of the passenger train in the United States, all one has to do is consider the economics of the service. Simply, the rising costs of passenger trains in wages and direct expenses rose faster than the revenue. In the period following World War II until the mid 1950s, expenses for passenger trains rose almost 40 percent while passenger fares rose only 15 percent. Some of the increased expenses were attributable to

labor conditions related to outdated work rules that dated back to 1919. Railroads discontinued many intercity passenger trains after 1958 simply because the railroad labor unions rejected all proposals to reduce costs directly related to crews for these trains.<sup>72</sup> John Stover succinctly described the nature of the problem with the following example:

William J. Quinn, president of the Burlington in the late 1960s pointed out that a Boeing 727 [airliner] in its two-hour Chicago to Denver flight had labor costs of \$391 for its six-member crew. The California Zephyr in its 18½ -hour Chicago-to-Denver run had a wage bill of \$2,288 for its forty-seven crew members, who had frequent crew changes. The airlines made a profit of \$943 for its trip, while the Zephyr had a loss of \$314.<sup>73</sup>

Keeping regularly scheduled intercity rail passenger service of any significance was a losing proposition for the railroads. With the loss of these scheduled trains went the capability of the Military Traffic Management and Terminal Service in 1965 to organize any meaningful surface passenger rail movements in support of personnel requirements for Viet Nam. Deficit relief for the railroads from intercity rail passenger service would not come for another five years.

With the activation of the Military Traffic Management and Terminal Service in early 1965 came the small locomotive and railcar fleet drawn originally from the various services in the late 1950s consolidation. The railcar fleet, at this time numbering over 5,000 pieces of rolling stock, included various types of freight and passenger cars. The freight cars were a mix of boxcars, for general freight and ammunition, tank cars, for liquids like petroleum and oil, hopper cars, for ballast and other bulk commodities, and flatcars, for vehicles and items too large for boxcars. Most of these freight cars served in the Defense Freight Railway Interchange Fleet described earlier. The passenger cars included World War II and Korean War era troop carriers, kitchen cars, sleepers, hospital

cars, and baggage cars. In 1965, various bases and stations continued to store these particular cars.<sup>74</sup> During a mobilization, the Department of Defense originally planned to use these rail cars to alleviate the surge pressure placed upon the civilian rail equipment. While certainly feasible for the freight cars in the fleet, given the state of passenger train service in the United States at the time, the plan to use the military passenger cars seemed less likely to unfold very well even if the need arose.<sup>75</sup> As it turned out, none of the passenger equipment ever served in any meaningful capacity for the Military Traffic Management and Terminal Service.

#### Overall Risk Assessment

The twenty years from 1946 to 1965 saw several significant developments with regard to military capabilities and domestic railroads. Firstly, the advent of interstate highways and commercial airports resulted in significant competition for railroads. Secondly, the next most significant change was the declining physical condition of the railroads as a whole resulting from the poor financial circumstances in which the industry as a whole found itself. Thirdly, the change in organization of the military with respect to early joint support operations and the resulting merger of resources altered the capability equation for the individual services. The net effect for the United States was the emergence of a less capable commercial railroad industry, serving fewer customers, with less efficiency despite the small legacy military rail capability left in the Department of Defense.

Some risk to the military increased as the competition from trucking, buses, and airlines affected the financial well-being of the railroads. With unyielding labor practices in place, the railroads found themselves at a competitive disadvantage. Trucks offered

door-to-door service for loads boxcar size and smaller. Buses took away much of the short-trip passenger business. Airlines grabbed the long-distance passenger business and made inroads to moving mail. The railroads responded with significant capital investments in new streamlined passenger equipment placed in service just as the interstate highways and commercial airports began their explosive growth. The risk to the military came from the learning how to incorporate the many new transportation options into the mobilization planning process.

The declining physical condition of the railroad industry presented some additional increase in risk for the military. As the fixed plant of the railroads suffered due to inadequately funded maintenance, service disruptions increased. Railroads serving military installations and the industrial base began to go bankrupt, especially in the northeast portion of the United States. The net effect on the rail network was less interchange business at a time the railroads needed that the most. With the loss of service by certain railroads to some installations, the net capability decreased for the military to move materiel and equipment.

The changes in military organization, like any corporate reorganization, reduced some risk for the Department of Defense. With the consolidation of services and functions related to transportation in general and rail service in particular, the military expected certain economies of scale and scope to yield some benefits. During the more austere times of this period, the military services expected to enjoy lower overhead costs and increased buying power under the centralized joint umbrella. Some elements, like the Defense Freight Railway Interchange Fleet, actually became economically self-supporting in the late 1950s and early 1960s.

In total, this period marked a moderate increase in the risk for the military. The loss of service to defense installations posed the greatest threat to military capabilities since it is cost ineffective to move some materiel, like ammunition, long distances by truck. Other developments during this period benefited the military, such as decreased time to move people long distances using commercial aircraft. Even recognizing such benefits, however, the net assessment for this first twenty years after World War II is one of modest increase in risk for the military to employ effectively the domestic railroads of the United States.

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<sup>1</sup>John F. Stover, *American Railroads* (Chicago, IL: University of Chicago Press, 1997), 186.

<sup>2</sup>United States Army, *The Transportation Corps Railway Fleet* (Washington, DC: USA Systems Management Group, October 1960), 541.

<sup>3</sup>Richard Saunders Jr., *Merging Lines: American Railroads, 1900-1970* (DeKalb, IL: Northern Illinois University Press, 2001), 412-413. This citation is but one of several related to specific strikes, mergers, abandonment, and bankruptcies. In particular, these pages of *Merging Lines* refer to the national defense arguments made by the managers of the Penn Central as the railroad faced bankruptcy in 1970.

<sup>4</sup>Stover, *American Railroads*, 186.

<sup>5</sup>Ibid., 191.

<sup>6</sup>Ibid., 186-187.

<sup>7</sup>Ibid., 187.

<sup>8</sup>Ibid., 173.

<sup>9</sup>*The Transportation Corps Railway Fleet*, 522.

<sup>10</sup>Stover, *American Railroads*, 186.

<sup>11</sup>Ibid., 190.

<sup>12</sup>Saunders, *Merging Lines*, 103.

<sup>13</sup>Ibid., 106.

<sup>14</sup>*The Transportation Corps Railway Fleet*, 521.

<sup>15</sup>Ibid., 546.

<sup>16</sup>Ibid., 567, 576. (Note that the hand-written page numbers included page 576 twice in the publication. The pages are identical.)

<sup>17</sup>Ibid., 575-576. (Note that the hand-written page numbers included pages 575 and 576 twice in the publication. The pages are identical.)

<sup>18</sup>Stover, *American Railroads*, 189-190.

<sup>19</sup>*The Transportation Corps Railway Fleet*, 524.

<sup>20</sup>Ibid., 529.

<sup>21</sup>Ibid., 528.

<sup>22</sup>Theodore E. Keeler, *Railroads, Freight, and Public Policy* (Washington, DC: The Brookings Institute, 1983), 27. The Bullwinkle Act of 1948 aimed to reduce competition by sanctioning rail and truck transportation rate bureaus.

<sup>23</sup>*The Transportation Corps Railway Fleet*, 528.

<sup>24</sup>Ibid., 530.

<sup>25</sup>Ibid.

<sup>26</sup>Ibid., 531.

<sup>27</sup>Ibid., 542.

<sup>28</sup>Ibid.

<sup>29</sup>Ibid.

<sup>30</sup>Ibid., 534-535.

<sup>31</sup>Ibid., 535.

<sup>32</sup>Ibid., 534.

<sup>33</sup>Ibid., 607-610.

<sup>34</sup>Stover, *American Railroads*, 195.

<sup>35</sup>Saunders, *Merging Lines*, 106.

<sup>36</sup>Ibid., 75.

<sup>37</sup>Ibid., 106.

<sup>38</sup>James E. Hewes Jr., *From Root to McNamara: Army Organization and Administration, 1900-1963*, ed. Maurice Matloff (Washington, DC: United States Government Printing Office, 1975), 285-286.

<sup>39</sup>*The Transportation Corps Railway Fleet*, 583.

<sup>40</sup>Ibid., 559. This topic was also discussed in detail by Arnold E. Ostrom, *Defense Transportation: The Military Traffic Management and Terminal Service* (Washington, DC: Industrial College of the Armed Forces, 1967), 2-3.

<sup>41</sup>*The Transportation Corps Railway Fleet*, 583-584.

<sup>42</sup>Saunders, *Merging Lines*, 107.

<sup>43</sup>Ibid., 121-124.

<sup>44</sup>Ibid., 117-118.

<sup>45</sup>Stover, *American Railroads*, 220.

<sup>46</sup>Saunders, *Merging Lines*, 120.

<sup>47</sup>Ibid., 121.

<sup>48</sup>Stover, *American Railroads*, 222.

<sup>49</sup>Ibid., 220.

<sup>50</sup>*The Transportation Corps Railway Fleet*, 565-566.

<sup>51</sup>Ibid., 566, 577.

<sup>52</sup>Ibid., 576-577. (Note that the hand-written page numbers included pages 575 and 576 twice in the publication. The two pages numbered 575 and 576 are identical.)

<sup>53</sup>Ibid., 566-567, 576-577. (Note that the hand-written page numbers included page 576 twice in the publication. The two pages numbered 576 are identical.)

<sup>54</sup>Ibid., 576-577. (Note that the hand-written page numbers included page 576 twice in the publication. The two pages numbered 576 are identical.)

<sup>55</sup>Ibid., 577.

<sup>56</sup>Ibid., 577-578.

<sup>57</sup>Ibid., 599-602.

<sup>58</sup>Saunders, *Merging Lines*, 233.

<sup>59</sup>Samuel C. McAdams, “Adequacy of Railroad Transportation in the United States” (Student thesis, United States Army War College, Carlisle Barracks, PA, 25 January 1960), 42-44.

<sup>60</sup>Ibid., 2.

<sup>61</sup>Ibid.

<sup>62</sup>Saunders, *Merging Lines*, 45, 47, 71.

<sup>63</sup>Ibid., 166.

<sup>64</sup>Ibid., 174.

<sup>65</sup>Robert L. Rascoe, “United States’ Railroads and National Defense” (Special study, Air University, Maxwell AFB: AL: Air University, 7 May 1962), ii.

<sup>66</sup>Ibid., 67.

<sup>67</sup>Saunders, *Merging Lines*, 239.

<sup>68</sup>Ibid., 240.

<sup>69</sup>Ibid., 203.

<sup>70</sup>Arnold E. Ostrom, *Defense Transportation: The Military Traffic Management and Terminal Service* (Washington, DC: Industrial College of the Armed Forces, 1967), 4.

<sup>71</sup>Ibid., 4-5.

<sup>72</sup>Stover, *American Railroads*, 222.

<sup>73</sup>Ibid., 228-229.

<sup>74</sup>*The Transportation Corps Railway Fleet*, 641-642.

<sup>75</sup>Ostrom, 22-23.

## CHAPTER 3

### 1966–1985: THE CRASH AND REBOUND

#### Overview

The events of this twenty-year period served as a culminating point for military rail capabilities. The late 1960s saw the end of service for several railroads, threatening the domestic rail industry. The early 1970s began a period of actions by governments and the railroads to save the system while the military reorganized with less emphasis on rail. The late 1970s witnessed the consolidation of failed railroads under a government plan with little regard to the impact on national defense. The early 1980s began the recovery years for the commercial industry at the same time as the continually decreasing support for the military changed from one of break-bulk cargo to containerization. This period ended with the ongoing retirement of much of the post-World War II equipment, and with it, the capacity to employ effectively much of the military infrastructure.

The late 1960s marked the end for many railroads and services the military relied upon up until this point. The Viet Nam War loomed large over the United States as the country fought off threatening economic problems. The moves toward joint operational support in the military services, such as the Military Traffic Management and Terminal Service, demanded better use of people and equipment while supporting the war effort. All this occurred even as the United States railroad industry appeared ready to implode from bankruptcy and mismanagement. Within five years of 1966, numerous railroads would be on the verge of collapse or gone. Rail transportation as a whole seemed ready to crash, and with it, the ability of the nation and her military to mobilize for war.

The early 1970s as a whole saw significant government intervention in the regulated railroad industry. Keeping the railroads running required the industry and government to address many issues. Passenger service, for example, consolidated for the most part under Amtrak, a quasi-governmental company created to preserve intercity rail travel. While the railroads continued to contract, so did the military capability they offered. At one point during this decade, the primary reason that members of the railroad industry used to rationalize a change in operating activities shifted from national defense to one of national economic health.

The late 1970s witnessed the collective efforts of the United States government and the railroad industry to keep this form of transportation viable. Numerous forms of legislation passed Congress, and the creation of another large quasi-governmental company to run the freight railroads in the Northeast United States saw a focused effort to rebuild a viable commercial rail service from the ashes of so many failed railroads. Making these pieces work together profitably became a top priority. Forgotten in this effort were the interests of the military bases and arsenals. These institutions fought to maintain their links to the rail network, particularly those on branch rail lines.

The early 1980s marked a tipping point for the railroad industry. With the assistance of government deregulation, numerous unprofitable activities ceased. Railroads sought to eliminate excess capacity while improving service to profitable customers. The United States military, though large, was not among these desirable customers. The Department of Defense recognized the dire situation as rail lines disappeared and initiated several programs to protect the interest of the government. Working against this interest was the retirement of much the older capital equipment.

Most of the rolling stocks assets procured since World War II became obsolete during this period. No procurement plans included any significant replacement equipment given the shift in commerce from break-bulk cargo requiring boxcars to containerized freight needing flatcars.

At one point in this twenty-year period under examination, the compelling need to maintain rail service in the interests of national defense became less prevalent. The military services, having surrendered their small interchange fleets and operations to a joint agency, offered no significant capability to manage, much less seize, and then run a commercial railroad of any size. The days of railroad strike breaking by sending in Army troops were gone, since any credible military-based capability to maintain and operate a railroad no longer existed in the active forces.

#### The Late 1960s: A Near-Total Industry Derailment

The year 1966 saw the Military Traffic Management and Terminal Service working to meet the requirements of the Viet Nam War. With an aging civilian railroad industry increasingly in poor economic shape, the services faced a shortage of railcars to meet specific demands. In particular, the Military Traffic Management and Terminal Service required sulphuric acid tank cars for the Army Ammunition Plants. (Residue sulphuric acid is a by-product of ammunition production.) These specialized railcars, required to support the buildup of ammunition for the Southeast Asia buildup, were generally unavailable from civilian rail sources. Roadway sources in the forms of tanker trucks also failed to provide any relief. As a result, the Department of Defense took steps to procure 200 of the cars for delivery late in the year.<sup>1</sup> This contract marked one of the last large buys for the Defense Freight Railway Interchange Fleet for several years. By

1966, the Defense Freight Railway Interchange Fleet consisted of over 5,500 freight cars and over 380 passenger cars.<sup>2</sup>

By the mid-1960s, the strain of economic competition with trucks, airlines, pipelines, and other forms of freight transportation had taken a severe toll on the railroad industry. The continued weight of government regulation related to everything from labor practices, to shipping rate controls, to Interstate Commerce Commission permission to discontinue unprofitable service added to the strain. Yet, the consolidation of railroads continued at an unabated pace. One of the most well known mergers finally came to fruition in 1968 after almost ten years of discussion and negotiations. Formal permission from the Interstate Commerce Commission alone took six years, and only then under specific conditions.<sup>3</sup> The merger of the Pennsylvania Railroad (PRR) and the New York Central Railroad (NYC) was the largest to date. The Penn Central Transportation Company was born on 1 February 1968.<sup>4</sup>

The Penn Central was a very important railroad in 1968. The two former archrivals were also two of the oldest and largest railroads in the United States. Combined, the Penn Central accounted for over 21,000 miles of main line and branch routes, which, at the time, amounted to about 9 percent of the national total. The railroad served numerous defense industries, ports, and military bases. Corporate analysts predicted that the newly merged company would generate an annual savings of \$80,000,000; however, as a condition of the approved merger, the government saddled the company with several requirements. One of these conditions was the takeover of the bankrupt New York, New Haven, and Hartford Railroad (The New Haven).<sup>5</sup> This condition was significant for the military because the New Haven served all of the

seaports from Boston south to the Bronx in New York City, including every one of the rail-served shipbuilding companies along the Connecticut seaboard. The New Haven also served several other military bases such as Camp Edwards in Massachusetts, as well as various Navy bases in Connecticut and Rhode Island.<sup>6</sup>

The Penn Central served as a watershed event in the history of American railroads, not for what it accomplished in the name of success, but rather for the spectacular implosion of the company. Little planning had been done before the approval to merge. The result was chaos. The two main companies continued to operate, in some cases compete, as though the merger never occurred. The internal rivalry between the “Red Team” (PRR) and the “Green Team” (NYC) continued.<sup>7</sup> Business systems, never aligned or synchronized, provided conflicting information for management. Leadership was absent. Customers abandoned the Penn Central as quickly as they could arrange alternative transportation for their freight, if such arrangements could be made at all.<sup>8</sup> The most significant implication during the fall of the Penn Central was not that it occurred, but, rather, that the United States government was helpless to prevent the collapse.

All of the transportation units on active duty in the United States military could theoretically have been ordered to assume control of the Penn Central by the President through the Department of Defense and the Military Traffic Management and Terminal Service, and attempt to run the railroad for the government in late 1969 and early 1970. The Military Traffic Management and Terminal Service Basic Emergency Plan did have Annexes written for strikes and other emergencies.<sup>9</sup> Given the nature of the problems, the condition of the equipment, and the morale of the employees, the chances for success by the military were minimal. The days of seizing railroads by the United States military

were all but over, and the total collapse of the Penn Central closer than anyone imagined. No one in the business community or in government expected this company to fold as quickly as it did.

#### The Early 1970s: Dragging Along the Roadbed

The 1970s marked rock bottom for the United States railroad industry. The decade also saw the end of the Viet Nam War and the ensuing drawdown of military forces. The active duty military relinquished to the reserves the capability to operate and maintain railroads. At the Department of Defense level, the Military Traffic Management and Terminal Service further transformed, if only in name. Overall, the capability of the railroads to support national defense declined even further. The inability of the railroads to make a profit from freight during this time harkened back to the 1950s and the inability of the railroads then to make a profit from passengers.

The failure of the Penn Central surprised everyone. In early June 1970, the board of directors of the Penn Central fired the executive leadership of the company. The administration of President Richard M. Nixon did not want the largest corporate failure in history to occur on its watch, fearing a panic on Wall Street. Given the civil unrest due to the war in Viet Nam, seizing the railroad with the military was out of the question. Secretary of Transportation John A. Volpe approached Congress for a loan guarantee of \$200 million for the Penn Central since the railroad served so many military bases, ports and defense contractors. The suggested loan arrangement involved legislation passed under the Defense Production Act of 1950, which meant to aid small-scale subcontractors in the defense industry. The events leading up to the actual collapse were complete with all of the usual arguments about national defense and security. In the end, the President

changed his mind and the government demurred with no federal aid provided. The company board of directors voted to declare bankruptcy voluntarily on 21 June 1970.<sup>10</sup>

The collapse of the Penn Central in 1970 marked the single largest corporate failure in the history of the United States to date.<sup>11</sup> What made the bankruptcy of the Penn Central relevant to the military was not the impact of the collapse on Wall Street, but rather the domino effect the collapse had on the entire rail network in the United States. The Boston and Maine Railroad fell just six weeks before the Penn Central collapsed in June 1970. The Lehigh Valley Railroad followed the Penn Central a few weeks later on 24 July 1970. The Reading Railroad declared bankruptcy on 23 November 1971. The northeast United States was slowly imploding, and by virtue of the rail interchange network, threatening the rest of the country by the diversion or absence of traffic. Other mergers in the works at the time began to falter. The Illinois Central Railroad – Gulf Mobile and Ohio Railroad merger proceedings at the Interstate Commerce Commission were contentious. The merger between the Rock Island and the Union Pacific Railroad languished even as the Rock Island physically withered. The Milwaukee Road, the last railroad to complete a transcontinental route, was dying, as was the Missouri-Kansas-Texas Railroad (The Katy). These roads all directly served or were links to key military bases and arsenals around the country. Overall, the railroad industry capability to support the military was in the worst shape since the end of World War II.<sup>12</sup>

The Penn Central bankruptcy was a watershed event in American history. Just two weeks after the collapse, the Penn Central was back in Washington, DC, on 11 July 1970 trying to secure a government loan to continue operating. The United States House of Representatives Commerce Committee served as the backdrop for Congressman

Harley O. Staggers (Democrat–West Virginia) to chide a member of the Penn Central management team, Jonathan O’Herron, for the collapse after the testimony from Mr. O’Herron implied that the government was to blame.<sup>13</sup> Criminal charges followed for some members of the Penn Central management team, and Judge John Fullam of the United States District Court for Eastern Pennsylvania was appointed to supervise the reorganization of the Penn Central. Congressman Staggers oversaw the congressional investigation focused on the railroad crisis. The experience he gained from this pursuit was important in later deregulation legislation.<sup>14</sup>

During the same time as the failure of the Penn Central, another major railroad problem emerged. The collapse of the intercity passenger train finally occurred. In October 1970, President Nixon signed the legislation to relieve the railroads of the debt-ridden passenger services. The National Railroad Passenger Corporation (Amtrak) began service on 1 May 1971 over a 21,000-mile rail network, taking over the remains of a passenger train landscape that had gone from 20,000 trains per day in 1929 to fewer than 500 in 1970.<sup>15</sup> With this new quasi-governmental corporation, the capability to move personnel in support of military requirements just barely existed.

Just before the end of 1970, President Nixon faced a railroad industry ripe with dissent and labor unrest. In December 1970, the United Transportation Union and the Brotherhood of Railway and Airline Clerks threatened to strike. With this threat, the big three automakers prepared to shut down, coal burning power plants predicted outages, and the steel industry readied to bank furnaces. Secretary of Defense Melvin R. Laird ordered the United States Army to prepare to seize the railroads. The Army cancelled the leaves of soldiers and prepared to move, despite having only one active unit trained in

railroad operations.<sup>16</sup> Only a back-to-work resolution by Congress that ordered an immediate pay increase averted the strike and the seizure.<sup>17</sup> This action marked the last time a President ever issued a credible threat to seize the railroads using the United States Army.

The Penn Central continued to operate as trustees attempted to find buyers for the railroad. Deferred maintenance on the plant and operating stock made that prospect dim. A shutdown of the Penn Central would affect the Northeast and Midwest industrial base immediately for these areas accounted for half of the factories in the country. Given the network interchange system on which all of the railroads operated, the fates of other connecting western and southern railroads also rested with the Penn Central. The Middle East conflict, oil embargo, and tenuous economy of 1973 added to the tension and urgency to do something.<sup>18</sup> The government recognized the dire predicament, and passed the Regional Rail Reorganization Act of 1973 (3R Act) that President Nixon signed on 2 January 1974. A new Northeastern rail system, composed of many of the bankrupt or failing railroads of the region, was organized and provisioned with \$2 billion to update infrastructure and equipment.<sup>19</sup> American railroads in the Northeast were now at least on government life-support.

While the crisis in the Northeast simmered, 1974 marked a year of change in the United States Army. As the military withdrew from Viet Nam, questions of excess force structure arose. The Department of Defense redesignated the Military Traffic Management and Terminal Service as the Military Traffic Management Command on 31 July.<sup>20</sup> As part of a larger draw down during this period, in 1972 President Nixon deactivated the last active duty United States Army rail component, the 714th

Transportation Battalion (Railway).<sup>21</sup> The remaining Army railroad-related elements, the United States Army Reserve 757th Transportation Railway Battalion in West Allis, Wisconsin, and what is now the 1205th Railway Operating Battalion in Middletown, Connecticut, were drilling reserve units.<sup>22</sup> (The New Haven, now the Penn Central, formerly served Middletown.)<sup>23</sup> The significance of this development was lost on the Nixon administration, for it marked the last viable means for the government to seize any United States railroad on demand without the activation of a reserve military unit. Given the civil unrest the country just experienced and the time required to mobilize and deploy reserve military units, the likelihood in the future of such an action on any significant basis was minimal at best.

#### The Late 1970s: Putting the Broken Pieces Back Together

On the larger railroad scene, the problems of railroad solvency now went well beyond the Northeast given that the troubles that started there extended to the rest of the country by virtue of the flow of interchange traffic. Again, the government recognized the problem, and Congress passed legislation. The Railroad Revitalization and Regulatory Reform Act of 1976 (4R Act) followed the 3R Act and President Gerald R. Ford approved the bill. The 4R Act created the for-profit Consolidated Rail Corporation (Conrail). Various creditors of the aided railroads held the Conrail stock.<sup>24</sup> This act helped to stabilize the connecting railroads beyond, but reliant on, the Northeast.<sup>25</sup> The legislation that created Conrail also helped preserve the commercial capability of the military to move supplies and equipment in the Northeast, in particular, and the United States in general.

As part of this larger effort to stabilize the domestic railroads, the Department of Defense planned and acted as well. In 1976, the Military Traffic Management Command developed the Railroads for National Defense Program. The genesis for the Program was the poor experiences that the Department of Defense had with the rail industry at the time. Lack of adequate maintenance by the railroads resulted in several derailments that delayed deployment exercises. Added to the concern of the Department of Defense was the string of bankruptcies of eastern carriers in recent years as well as the uncertain future of the railroad industry in general.

The Department of Defense organized the Railroads for National Defense Program along three functions. The first function identified Department of Defense requirements for commercial rail service in aggregate. The second function integrated the rail service requirements into commercial rail planning to support the transportation policy of the Department of Defense. The final function ensured strategic rail mobility by shielding required railroad infrastructure from abandonment and other adverse conditions.<sup>26</sup> The result was an active Department of Defense program that monitored the domestic rail industry for conditions adverse to strategic mobility.

The Railroads for National Defense Program established a means to examine the actions of the commercial rail carriers with regard to defense requirements. The Program employed four procedures and an integrated network of transportation agencies and contacts to support its objectives. The agencies and contacts included the commercial rail carriers themselves, state departments of transportation, and other civilian agencies such as the Interstate Commerce Commission. In 1976, the four procedures included:

1. Creating and updating the Strategic Rail Corridor Network Report

2. Analyzing abandonment requests made to the Interstate Commerce Commission
3. Examining proposed merger and bankruptcy requests made to the Interstate Commerce Commission
4. Monitoring the commercial rail network through United States Department of Transportation Office of Emergency Transportation

These four procedures formed the baseline of knowledge from which the Department of Defense made strategic mobility plans requiring commercial rail service.<sup>27</sup>

The Strategic Rail Corridor Network (STRACNET) Report, formally titled, *An Analysis of a Strategic Rail Corridor Network for National Defense*, included a comprehensive examination of the domestic railroad industry infrastructure. Conducted with assistance of the Federal Railroad Administration, the analysis examined main rail corridors between military installations, defense industries, and seaports. The study included military freight clearances of tunnels and passenger platforms, weight limitations of bridges, and alternative routes. The full STRACNET Report compilation of all 48 continental states and Alaska took until 1981.<sup>28</sup>

The establishment of the Railroads for National Defense Program was important. The procedures ensured active monitoring of the ongoing turbulence in the rail industry. The STRACNET Report documented and reported changes in the domestic rail network because of changes in traffic levels, installations, abandonments and mergers. While helpful, the Report was in effect backwards looking. Even updated, it stated what effect the changes already made. The same rationale was true for the monitoring activities since

it reported in arrears. The real power of the Railroads for National Defense Program was the abandonment analysis and the merger examinations.

Under the provisions of the Railroads for National Defense Program, the Military Traffic Management Command reviewed all requests for abandonment filed with the Interstate Commerce Commission. Railroads made these requests when traffic or profitability of a given line no longer justified commercial service. Since some small number of these requests included parts of the STRACNET, the Military Traffic Management Command examined a series of options to ensure these requests had no effect on national defense. In those cases with credible arguments about national defense, the options under the Railroads for National Defense Program, in order of increased expense to the government, included:

1. Denying the abandonment request with the commercial rail carrier retaining the line and its operations
2. Denying the abandonment request with the commercial shippers on the line taking it over
3. Denying the abandonment request and approving an increase in traffic or rates in order to make the line profitable
4. Delaying the abandonment with the Interstate Commerce Commission arbitrating further actions
5. Approving the abandonment and relocating the railhead service closer to an active rail line
6. Denying the abandonment, purchase of the line by the government, and establishing operations by the appropriate Service headquarters

From 1978 until 1999, a little over 2 percent of the abandonment requests submitted to the Interstate Commerce Commission affected national defense.<sup>29</sup>

The merger examination provided for under the Railroads for National Defense Program was the second important element. In addition to the analysis provided for abandonment proceedings, the Military Traffic Management Command procedure allowed it time to review at the Interstate Commerce Commission all of the proposed mergers and bankruptcies for the expected impact on national defense. In the case of mergers, the consolidated rail lines usually resulted in smaller network with fewer interchanges. With the goal of preserving at least one connection to vital defense interests, a secondary goal considered the preservation of rail carrier competition in the interests of the Department of Defense.<sup>30</sup> In the case of bankruptcy, a process similar to the abandonment procedure followed.

In 1977, the ongoing STRACNET initiative under the Railroads for National Defense Program received two important reports. The first of these two reports, titled, *List of Department of Defense Installations and Activities Requiring Rail Service*, provided the main points of military interest according to the Military Traffic Management Command. These points included military installations with rail requirements, defense industries, seaports, and major population centers. The second of these two reports, *Final Standards, Classification, and Designation of Lines of Class I Railroads in the United States*, designated a main line railroad between junctions and terminals. The STRACNET initiative used this Department of Transportation data to define strategic rail corridors across the country, linking bases, ports, and other important defense installations and industries. This report also fulfilled a congressional reporting

requirement in accordance with the Railroad Revitalization and Regulatory Reform Act of 1976. The data provided by these two reports together enabled the analysts working on the STRACNET initiative to study movements relative to mobilization requirements, peacetime traffic, and oversize shipments relative to clearances available on the available rail lines.<sup>31</sup>

In July 1978, another period of labor unrest began. The Brotherhood of Railway and Airline Clerks walked out on the Norfolk and Western Railway over technology changes. Though the management team succeeded in running about half of the trains with 3,500 supervisors, the 24,000 union members refused an order to return to work. The president of the United States, James E. Carter, invoked the sixty-day cooling off period of the Railway Labor Act, but the union president refused to order his members back to work.<sup>32</sup> The significance of this refusal cannot be overstated. Though the members returned to work under a subsequent restraining order, a major labor union had just balked at the United States government and got away with it. The government, in particular, the military, no longer had the capability to effectively seize and run the railroad even if the president had so ordered. That means was now gone. Only the Army Reserves maintained any capacity to operate a railroad by this time. This defiant union fundamentally changed the nature of railroad strikes from that point forward. One additional outcome from this strike was the change in language the government used in resolving the matter. The arguments for returning workers to their railroad jobs shifted from a national defense orientation to one of economic wellbeing.

On the academic front, 1978 marked the beginning of multiple serious studies related to domestic rail capability that continued unabated through the writing of this

thesis. The previous essays noted herein were but the start of the serious efforts to qualify and quantify the ability of the country to use her railroad resources. None of the studies written since 1978 and reviewed for this effort even mentions the possibility of seizing and running railroads, either foreign or domestic. The entire focus has been on the employment of civilian, commercial railroads for the express purpose of mobilizing and moving military equipment and supplies. Few even mention the movement of passengers except to note that airlines and buses assumed that business from the railroads.

The Association of the United States Army published its first version of "Strategic Mobility" in 1978. In this publication, the association noted with regard to domestic railroads, the "last time this network was put to a severe test was during World War II. But when we look at what has happened over the past 32 years [1946 being the benchmark] the system would flunk a similar test today."<sup>33</sup> The report goes on to outline how the capacity of 1946 was greater than that of 1978. It further highlighted the fact that the larger railroad system in 1946 was still rigorously taxed supporting the war. The implication was that the smaller system of 1978 entailed an even greater challenge. With regard to the reinforcement of the North Atlantic Treaty Organization (NATO), the support for mobilizing the military required significant reinforcements from the trucking industry, but that even with that extra lift, the gaps left by the shrinking rail network remained unfilled. Of particular concern was oversize and overweight equipment. With an estimated 3,000 heavy-lift flat bed trailers available (in 1978), an inadequate amount of surface lift was available to move the tanks, artillery, and bridging assets required of a modern American army. The state of the railroads was another area of cited concern. Major weaknesses cited included the condition of the rolling stock as well as that of the

roadbeds, rails, ties, switches, and bridges. The derailment rate of more than 10,000 events annually was an indication of the inadequate maintenance of the railcars and the supporting infrastructure. The final area of concern was that of adequate quantities of the right rail equipment, particularly flatcars. The Association concluded that,

The rail system obviously needs the most help, for it is in shaky condition without the strain of mobilization. . . . [A war] would provide a severe test for our rail and road transportation systems. It would have a heavy impact on the lives of all Americans as the vehicles that bring their comforts and necessities were turned in other directions. The most imaginative planning and the best possible management would provide limited relief.<sup>34</sup>

Clearly, in the eyes of some in 1978, the American military was at risk of not being able to move itself if the need arose.

The 1970s marked the turning point for the railroads as companies, but not for their capability to perform as they had after World War II or even the Korean War. Simply, the rate at which the railroads shrank or died as corporate organizations slowed. The nationalization of the Northeast railroads in the form of Conrail further dampened the turbulence in the railroad industry as a whole. The military reacted with the Railroads for National Defense Program and put in place a means by which to protect national defense interests, but the days of the military running railroads was over.

#### The Early 1980s: Industrial Resuscitation

The 1980s saw the railroad industry rise from the ashes of the previous 15 years. The government recognized the regulatory problems that the railroad industry faced, and acted to make changes. The military continued to refine the ways and means to employ the rail industry in strategic surface lift. The railroads themselves continued to merge.

This decade marked the organizational turn-around period that the railroads needed in order to remain viable operations.

Financially, the 1970s saw some of the lowest returns on investment in the modern history of railroads. The lowest at the time occurred in 1977 at 1.24 percent for the industry. That figure represented a level below that which it cost to borrow money, so the railroads starved for capital to replace and improve their physical plants. Returns that did not at least exceed inflation attracted few investors. The regulated rates required by the government in the late 1970s proved to be the cash-flow constraint. One of two things had to happen: either the government had to infuse cash into the industry in a further nationalization move *a la* Conrail, or the government had to deregulate the industry in order for it to negotiate rates that allowed it to increase the rate of return in order to borrow money from the private sector. The government chose the latter.<sup>35</sup>

Deregulation of airlines occurred in 1978. Trucking deregulation followed on 1 July 1980. As part of the change in the freight railroad industry, the legislation for the trucks considered the impact to railroads, and visa versa. In the legislation for the deregulation of the railroads, the industry remained subject to its common-carrier obligations. Industry leaders feared the idea of not being able to discuss joint rates or the idea that trucks might undercut the railroads driving more into bankruptcy. Captive shippers, like coalmines and large chemical plants, feared the railroads negotiating contract rates like a monopoly. The idea of market freedom frightened everyone, except a few key members of Congress, Representative James J. Florio (Democrat-New Jersey) and Representative Harley O. Staggers (Democrat-West Virginia), chief among them.<sup>36</sup>

The compromise that broke the deadlock on railroad deregulation centered on captive shippers. While commercial shippers fought this battle in Congress, many a military base benefited from it since the Department of Defense often found itself with service from only one railroad. For this reason, the merger review procedure of the Railroads for National Defense Program was important. The Staggers Act of 1980 passed the Congress and signed by President Carter on 14 October 1980. This legislation set in place a significant portion of the foundation the railroads needed to be competitive with trucks. The Staggers Act freed the railroads to cancel joint rates and traffic gateways with other railroads in order to keep the profitable long-haul charges. The Act also allowed the railroads to negotiate directly with shippers on rates just as the trucking industry did. Other contributions to this economic foundation came in the form of technology, labor productivity, fuel prices, and tax changes that benefited the railroads. The biggest challenge the railroads faced was the sluggish economy of the early 1980s.<sup>37</sup>

While the railroad industry worked to reorganize itself, the Department of Defense continued to take actions to secure its own interests. In 1981, the Department of Defense Military Traffic Management Command completed the STRACNET Report. Based on the Railroads for National Defense Program, the baseline report, which took over five years to complete, inventoried and qualified all of the routes and access lines in the United States. The report identified a 32,422-mile core system of railroad main lines and a 5,034-mile supporting system of railroad connector lines. Most of the railroad routes required for national defense met the criteria for height and weight set out by the military as necessary for mobilization. Only 233 miles, scattered in small segments about the core system, did not meet the maintenance criteria of the report.<sup>38</sup> The Department of

Defense noted, though, that the assessment continued and that absent in the findings were any significant condition that would preclude military movements at that time.<sup>39</sup> As part of that ongoing assessment, the Military Traffic Management Command merger procedure under the Railroads for National Defense Program ensured the Department of Defense a stake in any industry consolidation plans.

The military schoolhouses teemed with academic examinations of the state of strategic mobility and American railroads in the 1980s. United States Army Major John A. Kelly at the Command and General Staff College in 1981 reviewed the status of American railroads with regard to mobilization and sustainment. He concluded that the railroads lacked capability to meet mobilization requirements much less sustainment. Major Kelly's review examined the large amount of heavy, "non-roadable [sic] equipment," the location of that equipment relative to where it needed to be shipped, and the general physical and economic health of the railroads in the United States. Based on these conclusions, Major Kelly included numerous recommendations to address many of the shortcomings; however, none of his proposals offered a compelling economic value proposition for the private sector to take action. All befall to the government to address or to spend large sums of money, which, in effect, minimized the chances of actual implementation. Other recommendations, like relocating reserve units with a lot of equipment, ignored the political realities in which the Department of Defense must operate. Nevertheless, the analysis confirmed the dire state of the rail industry.<sup>40</sup>

Other studies of the time painted less of a pessimistic picture. United States Army Lieutenant Colonel Dave Deaner at the Army War College explored the topic of the entire transportation network in 1982. He concluded the overall transportation system

was adequate for mobilization, but that lack of specialized equipment might hinder some of “the hypothetical situations envisioned by the military.” Deaner’s network analysis included rail, highway, air, barge and pipelines.<sup>41</sup> While the work examined the complete spectrum of operational capabilities for moving materiel domestically, the shallow depth of the analysis with regard to recent railroad and trucking deregulation legislation failed to identify specific areas on which to focus efforts for improvement to support mobilization. Other military students would soon disagree with his conclusion.

In 1983, the General Accounting Office, acting on behalf of Congress, worked with the Departments of Defense and Transportation to study the condition of the domestic railroad system identified in the Strategic Rail Corridor Network report written two years previously. This report noted a number of shortcomings with the rail service, base infrastructure, and required equipment to support the ability of the Department of Defense to carry out any mobilization mission. This report specifically sought to examine the “efforts to maintain minimal levels of rail service at defense installations and identify and correct rail deficiencies.”<sup>42</sup> The scope of the report included the approximate 1,000 major defense installations in the continental United States, and, specifically, the 350 of these facilities that possessed rail capability. Of these rail capable installations, about 200 of the installations actually required this capability by an assigned mission.<sup>43</sup> By this time, branch line abandonment affecting military installations became one of the most significant second-order effects of the Staggers Act of 1980.

The 1983 General Accounting Office report focused on the actions required to assure a minimal level of rail service for national defense and on the efforts of the Department of Defense to improve rail capabilities at military installations. Working with

the Military Traffic Management Command and its subordinate Transportation Engineering Agency, the General Accounting Office noted that the growing number of abandonments related to branch railroad lines that serviced military installations surged with the passage of the Staggers Rail Act. Between 1979 and 1982, the Interstate Commerce Commission recorded 452 abandonment applications. The report also succinctly observed,

The problem for DOD [Department of Defense] is that although it is spending millions of dollars to improve rail capabilities at its installations, it cannot be assured that essential rail service beyond the installations' boundaries will be sufficient to move large volumes of materiel and equipment during mobilization. Therefore, DOD's efforts to improve rail capabilities at the installations may not result in an overall increase in the rail movement capability.<sup>44</sup>

The report also noted the Department of Transportation, "in its concern for the overall financial viability of the Nation's railroad system, has generally supported rail abandonments."<sup>45</sup> This conflict brought to light an opportunity for the two departments to work together to ensure that essential service to vital facilities remains viable. Without this cooperation, the loss of essential rail service could increase costs and delay in the event of mobilization. The General Accounting Office further recommended that the Departments of Defense and Transportation develop a comprehensive policy to address the problem to include considerations for alternatives and their costs, minimal service requirements, funding for minimal service, and any legislative changes necessary to guarantee essential rail service to those installations that require it by mission.<sup>46</sup>

With regard to the efforts of the Department of Defense to improve rail capabilities at military installations, the General Accounting Office report noted three issues. First, the movement capability reports submitted by Installation Transportation

Officers often contained conflicting data between certain required report sections, masking deficiencies. Second, funds for rail improvements might increase capability if justification for rail related projects focused on expected benefits. Third, movement requirements to use rail may require adjustment to other policies regarding motor convoys of military vehicles. The report examined each of these three issues in detail. It first recommended a modification in installation reporting with regard to accuracy of submissions by defense installations concerning their outloading and receiving capabilities to meet peacetime and mobilization requirements as well as the identification of constraining factors. Next, the report recommended the establishment of procedures to ensure appropriate justification and effective cost analysis concerning rail maintenance projects. Finally, the General Accounting Office recommended that the Department of Defense revisit the movement criteria for the feasibility and practicality of convoying military vehicles for distances up to 800 miles.<sup>47</sup> Interestingly enough, while this report effectively identified the risks associated with the military installation side of the fort-to-port equation, it failed to account for the capabilities of the ports of embarkation to receive, marshal, and offload military equipment during a mobilization.

While the United States government studied the legacy rail capability through various departments and agencies, the military schoolhouse continued to analyze the situation from a slightly different angle. A study by United States Navy Commanders David M. Graves and Jon P. Monson analyzed rail capability in 1983 with a focus on a specific innovation underway in the rail industry, namely containers. This study noted two changes in the rail landscape not previously examined by military analysts. This first of these two changes was the effects of deregulation on the rail industry as related to the

development of containers. The second change was the impact of containers on rail capabilities in support of military requirements.<sup>48</sup> The nature of the rail industry changed enough since the Staggers Act of 1980 such that, by 1984, military analysts saw the effects deregulation had on strategic mobility. As a result, the academic thinking about the capability began to change as well.

The Association of the United States Army revisited the topic of Strategic Mobility again in 1984. The report again sought to answer the Cold War-focused question, “Can get there from here – in time?” The report concluded that the rail system that endured a severe test in World War II and passed was now gone. The system of 1984 “would probably fail a similar test if a crisis of the same magnitude faced the nation, and that something must be done to correct the current shortcomings.”<sup>49</sup> On the bright side, the report noted work underway to build infrastructure and position heavy-duty flatcars to support the Army. The Association also commented on the need for greater capacity to handle containers by citing the need to duplicate on the west coast the modernization effort completed at the Military Ocean Terminal at Sunny Point, North Carolina.<sup>50</sup> By 1984, container movement of ammunition accounted for significant quantities since the traditional method of shipment using forty-foot boxcars proved less economical since the Staggers Act and the recession of 1981-1982.<sup>51</sup> The report by the Association noted concern about shipping containerized ammunition, and highlighted this capability imbalance between the coasts. The report attempted to allay previously stated concerns about railcar shortages outlined in the 1978 version by citing better plans to utilize resources already available; however, the report offered no concrete evidence to support the statement that “a shortage [of required rail cars] is no longer a major problem and

does not appear on any list of issues which must be addressed.” The association concluded that Department of Defense made significant progress since 1978, that the administration and congress supported the strategic mobility sustainment efforts, and that “no major pre-deployment issues remain to be resolved.”<sup>52</sup> Somehow, better planning filled the capability gaps left by the declining railroad industry in the eyes of the report authors.

To address the topic of strategic planning for rail requirements, United States Army Lieutenant Colonel Lewis I. Jefferies in 1985 offered a framework to ascertain the relative capabilities of the railroad industry to expand capacity in wartime. He examined total railcar numbers, railcar carrying capacity, “bad order” railcars (those needing maintenance), average weights per haul, average length of haul, and average turnaround times for railcars. He concluded that the railroads “cannot expand enough to absorb all of a wartime increase. Furthermore, the [railroads] would be hard pressed to absorb traffic diverted by hostilities from any other disrupted or restricted mode.”<sup>53</sup> In short, better planning could not compensate for lack of capacity in the time required for surge movements. Jefferies further asserted that the Military Traffic Management Command Strategic Rail Corridor Network failed to address the larger question of wartime requirements because it only identified routes needed in peacetime support of the Department of Defense. To date, his analysis was the only one that estimated the increase in traffic from peacetime to wartime in order to support his conclusions.<sup>54</sup>

#### Overall Risk Assessment

While the overall capability of the commercial railroad industry sank and then began to recover during the previous forty years, the same failed to hold true for the

military. The military capability to employ railroads in a strategic capacity declined rapidly with the railroads themselves throughout the time from World War II through the 1960s, but never demonstrated any significant recovery after bottoming out in the 1970s. Many noted the decline in the military capability during this time, but few in power or command took action to do anything. The nature of the support the military provided to the country also evolved from one of confrontation and seizing railroads to one of supplier and customer in the eyes of the industry. The days of breaking railroad strikes in the name of national defense effectively ended during this period. Some welcomed the change. Others recognized the loss of this capability for what it meant to the United States military, a significant risk requiring actions to mitigate various negative effects. Remnants of their concern remained at the end of this period.

The changes in military capabilities during this period were the result of three key circumstances. The first of these changes was the nature of the competition forced upon the railroads by the continued explosive growth of trucking companies and domestic airlines. The second of these changes was the impact of the declining physical condition of the railroad industry as a whole. The third of these three conditions was the changes in military organization as related to employment of railroads. These changes in total resulted in less employment of the railroads in support of military requirements, and made military seizures of commercial railroads during unrest far less likely. This period effectively marked the end of the military railroad era.

The emergence of the government funded interstate highways and commercial airports gave trucking companies and domestic airlines a competitive advantage with regard to the railroad industry. The year 1966 marked ten years since the creation of the

National System of Interstate and Defense Highways. Within that short time, truckers and airlines quickly dominated several areas of transportation long considered the domain of the railroads in their heyday. By 1976, railroad passenger service was less than five percent of what it was at a peacetime peak since World War II. The airlines essentially owned this long-haul market, and, by this time, the United States military used them often. Buses substituted for Pullman cars for short-haul military moves. Likewise, by the end of this period, trucks owned the short-haul market, and containers on flatcars began to emerge as the platform of choice for freight movements other than large military vehicles. Such changes marginally increased the risk for the military to employ railroads since people and freight could still reasonably move in support of a mobilization.

The second of these changes that affected military capabilities was the impact of the declining physical condition of the railroad industry as a whole. The changes made by the railroads to compete with the other forms of transportation in the late 1950s, coupled with the economics of the period, resulted in financial decisions that would set the stage for the wave of mergers and bankruptcies that followed. A perfect example of just such a decision was the significant investment in new railroad passenger equipment just as the airlines and highways emerged. The capital investment in and expenses associated with the new intercity passenger trains that soon ran close-to-empty weighed heavily on the financial bottom lines of the railroads. The fact that the military no longer used the rails to move troops simply confirmed what the railroads already knew about providing such services: the money was made in moving freight, not people. On the other hand, measuring in just dollars failed to capture the substantial increase in risk for the military.

The infrastructure served as the conduit to project power. As the railroad infrastructure shrank, the risks for mobilization increased.

The third of these three conditions that altered the capabilities for the military was the changes in the very military organization related to employment of railroads. The active duty United States Army railway battalions and companies that served the nation in World War II and Korea were only remnants of their former selves by the end of this period, now relegated to reserve status. The joint entity that assumed the roles of domestic military railroad operations and maintenance was a fraction of the size it was in 1966. The fleet of interchange railcars, much of it Korean era vintage, shrank as the effects of the deregulation altered demand for the forty-foot boxcars and tank cars. By the end of this period, much of the military railcar fleet was simply flatcars. The question of whether there were actually enough to mobilize was never effectively answered.

The period from 1966 to 1985 accounted for some of the most significant changes in military capabilities since World War II. With these changes came a considerable increase in the risk for the military. The Department of Defense did attempt to lessen this risk with such programs as the Railroads for National Defense Program and the STRACNET Report. Beyond 1985, the altered capabilities of the railroads to support the military required some significant changes in the way the military planned to conduct war in the future.

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<sup>1</sup>Arnold E. Ostrom, *Defense Transportation: The Military Traffic Management and Terminal Service* (Washington, DC: Industrial College of the Armed Forces, 1967), 23.

<sup>2</sup>Ibid., 22.

<sup>3</sup>John F. Stover, *American Railroads* (Chicago, IL: University of Chicago Press, 1997), 233.

<sup>4</sup>Mike Schafer, *Classic American Railroads* (Osceola, WI: MBI Publishing Company, 1996), 122.

<sup>5</sup>Stover, *American Railroads*, 233.

<sup>6</sup>Richard C. Carpenter, *A Railroad Atlas of the United States in 1946*, Vol. 2, *New York and New England* (Baltimore, MD: The Johns Hopkins University Press, 2005), 141-159.

<sup>7</sup>Schafer, 122.

<sup>8</sup>Richard Saunders Jr., *Merging Lines: American Railroads, 1900-1970* (DeKalb, IL: Northern Illinois University Press, 2001), 379-399.

<sup>9</sup>Ostrom, 35.

<sup>10</sup>Saunders, *Merging Lines*, 412-414.

<sup>11</sup>Ibid., 412.

<sup>12</sup>Ibid., 416-417.

<sup>13</sup>Ibid., 418-419.

<sup>14</sup>Ibid., 421-422.

<sup>15</sup>Stover, *American Railroads*, 234.

<sup>16</sup>Spencer R. Miller, “The US Rail System for Strategic Mobility” (Fort Leavenworth, KS: United States Army Command and General Staff College, 8 August 1972), 6.

<sup>17</sup>Richard Saunders Jr., *Main Lines: Rebirth of the North American Railroads, 1970-2002* (DeKalb, IL: Northern Illinois University Press, 2003), 66-67.

<sup>18</sup>Saunders, *Main Lines*, 92-93.

<sup>19</sup>Stover, *American Railroads*, 237-238.

<sup>20</sup>Surface Deployment and Distribution Command, “Brief History of SDDC” [online document] available from <http://www.sddc.army.mil/Public/Home/AboutSDDC/History.html>; Internet; accessed 28 March 2006.

<sup>21</sup>William G. Lehn, “Military Railroading: A New Look” (Student essay, United States Army War College, Carlisle Barracks, PA, 20 November 1974), 1.

<sup>22</sup>Watkins, "Rail Support of Military Operations," *Army Logistian* 29, no. 1 (January-February 1997): 4.

<sup>23</sup>Carpenter, *A Railroad Atlas of the United States in 1946*, Vol. 2, *New York and New England*, 144.

<sup>24</sup>Stover, *American Railroads*, 237-238.

<sup>25</sup>Theodore E. Keeler, *Railroads, Freight, and Public Policy* (Washington, DC: The Brookings Institute, 1983), 33-34.

<sup>26</sup>Robert S. Korpanty, "Preserving Strategic Rail Mobility," *Army Logistian* 31, no. 6 (November-December 1999): 36-39.

<sup>27</sup>Ibid.

<sup>28</sup>Don Phillips, "An Interstate Railroad System – alias STRACNET," *Trains*, April 1982, 14-15.

<sup>29</sup>Korpanty, 36-39.

<sup>30</sup>Ibid.

<sup>31</sup>Military Traffic Management Command, Transportation Engineering Agency, *Strategic Rail Corridor Network (STRACNET) and Defense Connector Lines* (Newport News, VA: Military Traffic Management Command, Transportation Engineering Agency, December 1998), 9.

<sup>32</sup>Saunders, *Main Lines*, 136-137.

<sup>33</sup>Association of the United States Army, "Strategic Mobility: Can We Get There From Here – In Time?" (Arlington, VA: Association of the United States Army, 1978), 2.

<sup>34</sup>Ibid., 2-3.

<sup>35</sup>Saunders, *Main Lines*, 175.

<sup>36</sup>Ibid., 175-177, 187-188.

<sup>37</sup>Ibid., 173-179, 187-188.

<sup>38</sup>Phillips, 14-15.

<sup>39</sup>Ibid., 190-191.

<sup>40</sup>John L. Kelly, "The U.S. Railroads: A Mobilization Asset?" (Master's thesis, United States Army Command and General Staff College, Fort Leavenworth, KS, 5 June 1981), iii and 59-70.

<sup>41</sup>Dave Deaner, “The U.S. Transportation Network – Is It ‘Mobilizeable’?” (Student essay, United States Army War College, Carlisle Barracks, PA, 16 April 1982), 1-3, 46-48.

<sup>42</sup>United States General Accounting Office, Report to the Secretaries of Defense and Transportation, *Federal Actions Needed to Retain Essential Defense Rail Service* (Washington, DC: General Accounting Office, 20 May 1983), 2-4, GAO/PLRD-83-73.

<sup>43</sup>Ibid., 1.

<sup>44</sup>Ibid., 6.

<sup>45</sup>Ibid., i.

<sup>46</sup>Ibid., 10.

<sup>47</sup>Ibid., 17.

<sup>48</sup>David Graves and Jon Monson, “Rail Capability to Move People and Material During National Emergencies” (Student research report, Industrial College of the Armed Forces, Washington, DC, April 1983), 25.

<sup>49</sup>Association of the United States Army, “Strategic Mobility: Can We Get There From Here – In Time?” (Arlington, VA: Association of the United States Army, 1984), 6. The 1984 version of this report does not indicate that it is a reprint of the 1978 version with text changes.

<sup>50</sup>Ibid., 3, 6-7.

<sup>51</sup>Saunders, *Main Lines*, 190.

<sup>52</sup>Association of the United States Army, “Strategic Mobility: Can We Get There From Here – In Time?” (1984), 7.

<sup>53</sup>Lewis I. Jefferies, “U.S. Railroads: A Military Asset” (Student essay, United States Army War College, Carlisle Barracks, PA, 1 May 1985), 6.

<sup>54</sup>Ibid., 5-9.

## CHAPTER 4

### 1986–2006: RECOVERY WITH DIVERGENCE

#### Overview

The last twenty years, 1986 to 2006, of the sixty-year period under examination have marked an unprecedented turn-around in the health of the rail industry. During this same time, the capability of the military to mobilize and deploy by rail did not recover in a similar fashion. The consolidation within the industry continued to reduce the size of the rail network, base closures have reduced the number of available railheads, and railroad operations have undergone an intermodal revolution. Now, ‘twenty-foot equivalent’ unit containers rule the rails on articulated well-deck railcars. The days of throwing workers on a job to unload manually a break-bulk boxcar full of ammunition onto a ship had long passed. With them, so too had the ability of the military to optimize rail use to effectively mobilize and sustain itself.

The late 1980s saw significant changes in the Department of Defense. A huge military buildup under President Ronald W. Reagan gained momentum, and the Goldwater-Nichols Act altered how the military organized and fought. While the Department of Defense focused on this buildup and reorganization, the degradation of military rail capabilities continued despite the renewed focus on Cold War mobilization. Few outside of the General Accounting Office noted the importance of this decline in rail capability.

The early 1990s tested the plans the military made in the 1980s as well as the will of the government. What the General Accounting Office, in its 1987 report on military rail readiness, presumed might happen in the event of mobilization came partially true

during the outloading for Operations Desert Shield and Desert Storm in 1990 and 1991. Labor strife in 1991 challenged the United States government as it prepared to go to war. Technology developments aided the railroads to compete in time-sensitive markets. The recovery of the industry was at hand.

The late 1990s witnessed further industry consolidation, the Internet revolution with the introduction of customer portals, and the beginning of the trade boom with China. The military continued to address problems in rail infrastructure, to contend with railcar availability, and, like other customers, to react to the customer service 'meltdowns' caused by rail mergers. The 1970s rescue effort of the railroad industry by the United States government and the creation of Conrail culminated in the splitting of the railroad between two others. The railroad industry again enjoyed good times.

The first few years of the twenty-first century witnessed explosive growth in the railroad industry just as the country found itself again at war. The military operations overseas tested some of the mobilization plans of the Department of Defense as thousands of large, tracked vehicles and twenty-foot containers descended on ports of embarkation. All of these efforts continued while the United States economy transacted increasingly more business with Asia. This business climate placed an historic demand on domestic ports and created some capacity constraints that competed with military requirements.

The last twenty years recorded the overall recovery of the railroad industry even as the military capability continued to degrade piecemeal. Over this time, the number of railroad companies decreased, as did the rail network mileage, while the capacity and productivity of these same firms recovered and increased. Despite this overall

performance improvement, the military organizationally struggled to maintain any semblance of an effective or responsive rail mobilization capability.

#### The Late 1980s: The Way of the Caboose

In 1987, Congress conducted a review of the state of military rail capability. A report by the General Accounting Office for the United States House of Representatives Committee on Armed Services Subcommittee on Readiness recorded the deterioration levels of rail facilities at 47 mobilization stations. The United States Army designated these 47 stations as the points from which deploying active and reserve units left for ports of embarkation. The report noted that the deterioration was “a long-standing problem” that the Army only began to address in 1986. Since the mobilization stations “were in such poor condition that their ability to accomplish mobilization movements as planned was questionable,” the Army planned to spend around \$140 million from fiscal years 1986 through 1992 to repair and rehabilitate military rail facilities. The Army selected Forces Command as the executive agent to manage the effort. Other findings included a lack of identified requirements for military-useable flatcars by the Military Traffic Management Command and a maldistribution of blocking and bracing material for loading railcars.<sup>1</sup> Clearly, the military was not ready to mobilize using rail facilities even if the railroads were prepared to go.

As the General Accounting Office assembled this report, other transformational activities occurred in the United States government. The Goldwater-Nichols Department of Defense Reorganization Act of 1986 gave President Ronald W. Reagan the authority to reorganize elements of the military. One of those elements included the various agencies and activities that oversaw transportation services. President Reagan ordered the

Secretary of Defense to establish the Unified Transportation Command on 18 April 1987. This command resulted in part from a provision in Goldwater-Nichols that directed the consolidation of military transportation functions. The Implementation Plan for the Unified Transportation Command outlined the roles, responsibilities, and organization of what then became known as the United States Transportation Command. The Military Traffic Management Command became one of three transportation component commands under the United States Transportation Command.<sup>2</sup>

The Association of the United States Army revisited the topic of strategic mobility one more time in late 1989. While many of the exact sentences from their earlier versions again appeared, some refined statements and numbers made the report appear weak, almost less analytical, in the study of rail movement. Examples of refinement included the number of prepositioned flatcars at key military installations (550 in 1989 versus 400 in 1984) as well as the restatement about the inadequacy of the west coast container handling capability. The report topics clearly focused on air and sea mobility, and less so on road and rail mobility. The report also repeated the unsupported, almost hopeful, statement that “proper planning and preparation has in fact eliminated a worrisome shortage [of railcars and heavy trucks].” By this time in the history of military rail capability, nothing came close to making this statement remotely truthful. The risk for the military in 1989 with regard to surface mobility utilizing domestic railroads was great.<sup>3</sup>

#### The Early 1990s: A Test of Capability

The 1990s witnessed several military tests of the railroads as the industry itself recovered and continued to merge. Deregulation under the Staggers Act enabled the

railroads to shed unprofitable lines with the review concurrence of the Military Traffic Management Command under the United States Transportation Command. The Interstate Commerce Commission gave way to the Surface Transportation Board. Technology and worker productivity drove further changes. The railroads that entered the twenty-first century differed greatly from the railroads that helped win World War II despite the fact that the rail network still served many of the same places the military required. This decade marked a period of recovery and growth for the railroads. Unfortunately, the military saw little benefit or risk reduction from the efforts of the railroads.

August 1990 saw Iraq invade Kuwait. The response of the United States resulted in Operations Desert Shield and Desert Storm. For strategic mobility using the domestic railroads, the performance of the United States Transportation Command and the services disappointed many. Though a significant amount of dry cargo and petroleum moved in support of the conflict, the mobilization efforts strained under the weight and friction caused by equipment shortages and infrastructure collapse. Two examples illustrated the systematic strain the military rail capabilities suffered: the outbound and inbound movements of the 101st Airborne Division from Fort Campbell, Kentucky and the outbound movement of the 24th Mechanized Infantry Division from Fort Stewart, Georgia.<sup>4</sup>

The 101st Airborne Division at Fort Campbell, Kentucky, suffered the most challenging setbacks in their use of rail to move to and from the port in Jacksonville, Florida. The state of the infrastructure at the Fort was terrible. The twenty-two miles of track on the base were unusable. Rotted wooden ties and lightweight rail gave way under the heavy-duty flatcars loaded with tanks and other oversized vehicles. With the threat of

time-consuming derailments in any attempt to load on post, the vehicles and equipment finally required loading at sites off base. Of the 1,071 railcars finally loaded, the Army completed only 794 of those cars at the nearest loading facilities near the mainline of the serving railroad twenty-two miles away near Hopkinsville, Kentucky. The loading of the remaining 277 railcars occurred elsewhere between Fort Campbell and the port. To supplement the railcars, the Division required more than 500 commercial track trailers to help move the gear. The number of railcars and trucks required was less than other divisions since the 101st was a light airmobile division. The unit possessed "few heavy, tracked, or other vehicles that could not be driven on public highways."<sup>5</sup> The return from theater took just as much effort.<sup>5</sup> The largely unmet recommendations of the General Accounting Office reports of 1983 and 1987 regarding military rail capabilities now seemed prophetic.

The 24th Mechanized Infantry Division deployed during Operation Desert Shield. The experience of the unit mimicked that of the 101st, but the 24th was a heavier unit. The tracks at Fort Stewart were old and in very poor condition. The base had no ongoing maintenance effort with regard to the railroad infrastructure. While at least attempted, the constraints on the rail operations limited speeds to ten miles per hour or less. This condition lasted until October 1990 when the base rail system collapsed and the on-base out-loading ceased due to required emergency repairs. Off-base facilities completed the task for the military.<sup>6</sup> Judging by these two examples, the days of military self-deployment by rail disappeared by 1990.

Though the equipment of the two previous examples reached the ports on time, the support for Operations Desert Shield and Desert Storm failed to demonstrate any

sustained capability to support military operational endeavors. The long drawn-out schedule of shipments, with supporting trucks included, offered no significant stress for the commercial railroads. Over 16,000 commercial and military rail cars delivered equipment and supplies in support of the operations.<sup>7</sup> On the military side, the Army did activate the 757th Transportation Railway Battalion and the Sunny Point Detachment of the 1205th Railway Operating Battalion. These units supported domestic operations at specific military installations and depots. The net effect of this experience left many installations and depots with concerns about the effectiveness of rail support of future operations. The answer to these concerns came later in 1995 when the United States Army established offices in the Army Combined Arms Support Command in Fort Lee, Virginia, and in the Army Transportation School at Fort Eustis, Virginia, to oversee the training, certification, and licensing of military and civilian railroad personnel.<sup>8</sup> This effort came over twenty years after the active duty unit with the same general mission deactivated under President Nixon.

The year 1992 marked a number of railroad-related activities in the government. First, in January 1992, the Joint Chiefs of Staff published a strategic mobility requirements study that altered the long-standing use of boxcars by the services for moving freight from depots to seaports, especially ammunition. Instead, depots began to stuff containers and load these twenty-foot steel intermodal boxes onto flatcars for movement to the ports. The implication for this action was increased risk for the military in rail equipment sourcing for unit movements since containers now competed with military vehicles for limited numbers of military and commercial flatcars.<sup>9</sup> Next, on 14 February 1992, the Department of Defense elected to integrate global transportation,

including air, land, and sea, under the United States Transportation Command in support of national security objectives. This formally assigned the Transportation Command control of all service-operated transportation support in both peace and war.<sup>10</sup> Finally, a November 1992 General Accounting Office report reviewed the performance of the railroads and concluded that the experiences of 1990 and 1991 foretold of continued problems in the area of military railroad capabilities. While acknowledging the limited success of the load-outs, the report cited the ongoing deterioration of the mobilization stations, the management problems with the rail rehabilitation program of the United States Army, and other equipment related problems. Recommendations for improvement by the General Accounting Office went to Secretary of the Army.<sup>11</sup>

While the government changed, so to did business. Consolidation in the railroad industry continued into the 1990s, and the military expressed interest in those developments. The Military Traffic Management Command participated in several reviews under the Interstate Commerce Commission until 31 December 1995, when the commission disbanded and its mission given to the newly created Surface Transportation Board. The most notable involvement by the military in the review process came because of a merger request from the Union Pacific Railroad. In reviewing the Union Pacific Railroad request for merger with the Southern Pacific Railroad, the Military Traffic Management Command filed testimony with the Surface Transportation Board to protect the competitive interests of the Department of Defense at six different installations.<sup>12</sup>

#### The Late 1990s: Capacity Constraints

The Military Traffic Management Command, with regard to mergers, continued to seek protection for the military in the form of rail network access and competitive

pricing through involvement in the new Surface Transportation Board (STB) just as it had with the old Interstate Commerce Commission.<sup>13</sup> What the Military Traffic Management Command found uncontrollable in the summer of 1997 was a complete service breakdown of a major railroad company, the Union Pacific Railroad (Union Pacific). "The Meltdown of 1997" disrupted rail service on a strategic basis. Beginning with the post-merger activities of the Union Pacific and the Southern Pacific Railroad (Southern Pacific), their planned consolidation of services in the Gulf area resulted in a clogged classification rail yard in Houston. This congested yard, Englewood, in turn, disrupted service to the Houston area by preventing trains from entering. These trains, consequently, parked on the various Union Pacific main lines into the Houston area, or remained at their originating yards. These outlying yards, in turn, blocked other main lines with trains leading into Texas. With those lines blocked, other yards in other states began to clog. This situation tied up locomotives intended for departing trains from Houston and elsewhere. The traffic jam grew, and trains parked on sidings from Texas to California. Industries served by rail, starved for raw materials and unable to ship finished goods, began to halt production. Train crews, working harder to overcome deficiencies in the information systems, became fatigued. Errors soon occurred with catastrophic results. The disruption of service rivaled that of the Penn Central collapse. Moving anything by rail became a test of patience. Railheads closed to new traffic and ports worked to clear all of the incoming freight. During this time, the military was at its most vulnerable, and it remained so until July 1998 when the Union Pacific, with the help of other major carriers, overcame the capacity management and information system problems that triggered the disruption in the first place.<sup>14</sup>

In 1998, the Transportation Engineering Agency of the Military Traffic Management Command released the latest version of the Strategic Rail Corridor Network Report, now titled *Strategic Rail Corridor Network (STRACNET) and Defense Connector Lines* in order to recognize the importance of the supporting rail system outside the core rail network. Updated from the original report first released in 1981, *Civil Rail Lines Important to National Defense* served as the basis for this latest version. (Additional releases of this report occurred in 1986, 1990 and 1993.) While the contents of the report remained generally the same, the rail network changed slightly with each version.<sup>15</sup> By 1998, the core system remained very close to the 1981 mileage numbers (1981 – 32,422 miles versus 1998 – 32,421 miles), but the connector lines actually increased (1981 – 5,034 miles versus 1998 – 5,387 miles).<sup>16</sup> One of the reasons in the 1998 report accounting for some of the mileage changes from previous versions included a supplemental clearance route designation for the central portion of the east coast corridor between Florida and New Jersey due to clearance restrictions between Washington, DC and the New York-Newark area.<sup>17</sup>

The remainder of the 1990s saw other smaller examples of operational support and rehabilitation efforts in support of military plans. Bosnian operations involved activated members of the 757th Transportation Railway Battalion.<sup>18</sup> In 1999, The United States Army Industrial Operations Command required the use of rail to load-out the Air Force ammunition required for Operation Noble Anvil.<sup>19</sup> The Military Traffic Management Command Transportation Engineering Agency oversaw the evolution of the Railroads for National Defense Program. The program in the mid-1990s aided the rehabilitation initiatives of several installations in order to revitalize their military

railroads. Fort Sill, Oklahoma, and Fort McCoy, Wisconsin, directly benefited from these infrastructure maintenance efforts. These efforts further extended to include elements of the strategic network, like bridges and tunnels, susceptible to natural disasters.<sup>20</sup> Clearly, the focus of the Military Traffic Management Command evolved during this decade, but the capability improvement, as a whole, remained minimal through the remainder of the 1990s.

#### 2000 to 2006: Container Wars

By 2000, the military capability solely supportable with government owned railcars declined from the 1955 peak of over 15,000 pieces of equipment to just over 3,200 pieces available. Of this number, around 2,000 cars qualified for interchange. During this period, the mix and numbers of specific types railcars also continued to change. Flatcars now ruled where boxcars once dominated the roster of the Defense Freight Railway Interchange Fleet. Tank cars, for petroleum and other bulk liquids, remained significant in numbers as a percentage of the fleet, but still only numbered 395 in total.<sup>21</sup> Missing from the roster was the fleet of boxcars, the gondolas, the passenger cars, and the wreck train equipment that once insured the readiness of the now-gone railway battalions for their former mission.<sup>22</sup> The military capability to supply the thousands of railcars needed for mobilization, in particular flatcars, was now clearly the domain of commercial railroad companies. These railroad companies, more specifically, employed their proxy, the TTX Company, to provide the specialized flatcars required by the military.<sup>23</sup> The Defense Freight Railway Interchange Fleet provided less than 1,200 flatcars.<sup>24</sup> This figure represented a fraction of the estimated 6,600 flatcars required in a worst-case two-theater war scenario during a peak mobilization week.<sup>25</sup> The military

captive fleet of railcars for intra-installation use accounted for the remainder of the military rolling stock.<sup>26</sup>

The military academicians soon took note of this modest equipment posture. In June 2000, Major Dwight C. Sones, United States Air Force, submitted a graduate research paper on the topic of the domestic flatcar inventory. His analysis of the commercial industry and the Defense Freight Railway Interchange Fleet availability of flatcars proved insightful. Examining the prepositioning of heavy-duty flatcars at selected Army installations, Sones studied different scenarios using data from the Transportation Engineering Agency of the Military Traffic Management Command. Based on inventory levels, car configurations, maintenance activities, and equipment retirement of commercial and military flatcars in 2000, his results indicated that future inventories of flatcars needed to support mobility requirements would reach inadequate levels as soon as 2005.<sup>27</sup> The risk for the military continued to grow.

Others soon noted the dilemma faced by the military. Bob Honea, Director of the National Transportation Research Center, wrote an article for the Transportation Research Board in its late 2000 issue of *TR News*. Honea wrote about the topic of military preparedness. In the article, the Department of Defense transportation issues took center stage. Two topics that received significant coverage by Honea were capacity and intermodal concerns. The first topic succinctly summarized the problem of capacity as follows,

The rail industry is a complicated network with a fixed infrastructure. The industry cannot re-deploy assets easily and has difficulty adding capacity, even with reliable demand forecasts. A sudden surge in demand – which would occur in a military crisis – could cause significant problems for a line running near capacity. . . . [R]ail capacity is limited by connections. Bottlenecks in the system

allow only so much freight to squeeze through. Although the rail industry can identify these choke points, correcting the problem can take up to five years.<sup>28</sup>

In late 2000, capacity was already an issue for many major railroads. The second topic discussed the size and age of the flatcar fleet, mirroring the data from Major Sones' graduate research paper of the previous June, and pointed out how few turns, an industry measurement of usage, some of the railcars experienced. For the specialized 60-foot flatcars that carry military vehicles, this class of railcar saw utilization of less than two loads per year. The bottom line for the military was simple: Commercial railroads are less likely to reinvest in such equipment since the lack of productivity precludes an acceptable rate of return on the capital.

As part of the railroad capacity analysis in the *TR News*, Honea interviewed a representative of the CSX transportation companies (CSX Intermodal, CSX Lines, and Customized Transportation, Incorporated) named Andy Fogarty, who outlined some of the related intermodal issues for both the railroad and trucking industries. According to Fogarty, high utilization of rail capacity (speaking for CSX), underutilization of flatcars, and underutilization of alternative shipping means using trucks were the most significant military capability issues. (In the late 1990s, a shortage of approved munitions-qualified drivers in trucking industry created shortages of capabilities for that mode of transport as well.) He offered four recommendations to address these issues:

1. The military should short-haul containers of ammunition, early in military crisis scenarios, from depots to intermodal facilities for transfer to railcars in order to build up available railcars at the depot.

2. The military should educate itself and Congress on the costs associated with the crisis scenario diversions of flatcars from commerce to the military.

3. The rail industry and the military should change their business practices in order to make commercial investments in replacement flatcars a financially viable objective.

4. The rail industry and the military should negotiate for the railroad and trucking industries the equivalent of the Civil Reserve Air Fleet and the Voluntary Intermodal Sealift Agreement.<sup>29</sup>

In summary of Honea's analysis, Rear Admiral Ed Fahy, United States Transportation Command, Director of Plans and Policy, agreed that defense risk increased with a good economy and growing reliance on commercial transportation.<sup>30</sup>

The events of 11 September 2001 opened the door to new military actions requiring mobilization support of the railroads. Operation Enduring Freedom in 2001 and Operation Iraqi Freedom in 2003 each placed demands on commercial industry to provide equipment and service to support ongoing military requirements. (The surface transportation management process, lacking any centralized capability to forecast and manage the needed railcars and associated movements, was greatly inefficient.)

Government-owned railcar availability suffered from malpositioning and the refusal of Installation Transportation Officers at various Army posts to release pre-positioned railcars due to the ad hoc nature of the requests for forces. Pressure on commercial railcar availability increased as Installation Transportation Officers lacking adequate lift contacted railroads directly for empty cars, sometimes competing with other military customers working their requests through the Military Traffic Management Agency.

Trucks made up the difference where possible. The fort-to-port movement process suffered for lack of overall coordination.<sup>31</sup>

On the port side of the equation for these operations, the military mobilization at times outpaced the ability of the commercial ports to receive the shipments. Commercial ports during this period operated at close to capacity before the military levied any requirements. Unprecedented traffic in the forms of intermodal shipments arriving in containers from Asia made for little marshalling room for the hundred of pieces of military equipment arriving for deployment. (As a simple measure of traffic competing with the Operation Iraqi Freedom military requirements, the Port of Houston experienced a 15.6 percent increase in container handling from 2003 to 2004 alone.)<sup>32</sup> Deconfliction problems surfaced at the ports as loaded railcars and trucks arrived and then waited for unloading.<sup>33</sup> Some railcars experienced vandalism as trains waited on nonsecure sidings.<sup>34</sup> These marshaling problems in turn challenged the ability of port rail managers to maintain focus on priorities of shipments. Confronted by this sequencing mismanagement at the receiving ports, Installation Transportation Officers struggled to establish an effective means to determine which surface mode of transportation to use for the next series of loads.<sup>35</sup> Had the requirements for either operation mirrored the mobilizations needs of a war plan with a greater demand for timely force closure, the success of similar fort-to-port movements remain questionable.

The Global War on Terror precipitated a number of updates and changes in the joint military transportation scene. The first of these updates was a September 2003 revision to the Strategic Rail Corridor Network (STRACNET) and Defense Connector Lines Report. The two most significant developments with regard to the strategic rail

network was the decline in STRACNET miles from 32,422 in 1981 to 31,980 and decline in connector miles from 5,034 in 1981 to 4,560 miles.<sup>36</sup> Base and industry closures likely accounted for these shrinkages. One of the other changes was in the way the Department of Defense organized transportation support. In the fall of 2003, the Department of Defense designated the Transportation Command as the Joint Distribution Process Owner, responsible for movement, distribution, and all associated in-transit visibility. As part of this revision, the Military Traffic Management Command changed missions to reflect “its increased emphasis on deployment operations and end-to-end distribution of surface cargoes from depots to the war fighters.” The Military Traffic Management Command became the Military Surface Deployment and Distribution Command (SDDC) on 1 January 2004.<sup>37</sup>

The military schoolhouses followed the developments of surface mobility closely during this time. Colonel William C. Gibson, a student at the United States Army War College, wrote one of the most notable research papers on the topic of strategic rail transportation. He succinctly summarized the problem,

There has always been a long standing emphasis on strategic air and sealift. . . . [T]he effect of this emphasis ignores the potential risks associated with a significantly reduced commercial rail capability. . . . [A]ll the ships and planes in the world required to rapidly deploy current and future forces to theater are mute, without the commercial rail capacity and processes needed to first get the equipment from port to port in a timely and synchronized manner. It is time for DoD [Department of Defense] to truly manage rail as a strategic asset on par with airlift and sealift and recognize that it will no longer be an unconstrained asset in the future.<sup>38</sup>

Gibson then carefully outlined the details of the ongoing United States Transportation Command Mobility Capabilities Study, the Surface Deployment and Distribution Command flatcar inventory study of 2003, the proposed rail industry Assured Access

Agreement, and the establishment of the Surface Planning Advisory Group. Using lessons learned from Operation Iraqi Freedom, Gibson outlined the challenges faced by the Mobility Capabilities Study and described the risks associated with the declining population of military-useful flatcars. He explained how the Assured Access Agreements were similar to the Civil Reserve Airlift Fleet for aviation and the Voluntary Intermodal Sealift Agreement for ocean movement requirements. Gibson closed his strategic rail argument with an explanation how the Surface Deployment and Distribution Command established the Surface Planning Advisory Group in December 2004 to address some of the shortcomings discovered during the mobilization efforts supporting Operation Iraqi Freedom. His recommendations to reduce the risk for the military with regard to use of commercial rail included leasing more flatcars as soon as possible, centralizing rail management under the Surface Deployment and Distribution Command, including rail movement in strategic force projections, and addressing joint capabilities employing rail in future strategic planning guidance.<sup>39</sup> Clearly, rail requirements remained a significant source of concern into late 2004.

This last two years of this period of history continued to present challenges to the military with regard to the commercial railroad industry. The first of these challenges was the unabated growth of traffic at the seaports. The year 2005 alone marked a record-breaking year in the volume of containers handled at domestic ports (despite the hurricanes experienced in the gulf region). Early indications in 2006 marked the year as another record-breaker.<sup>40</sup> The second challenge was the constraints imposed by insufficient capacity of the railroads. To address this matter, in July 2006, Senator Chester Trent Lott (Republican–Mississippi) introduced the Freight Rail Infrastructure

Capacity Expansion Act. This proposed legislation offered, “a 25% tax credit for upgrades to track, bridges, tunnels, signals, yards, terminals, or intermodal transfer facilities,” and, under certain conditions, locomotive purchases.<sup>41</sup> Like previous railroad-related legislation, this bill offered the potential for capital improvements that might translate into less risk for the military to employ rail.

#### Overall Risk Assessment

This last twenty-year period clearly marked resurgence in the rail industry. Unfortunately, military capability to use rail experienced no similar recovery. What did change for the military was the manner in which railroads moved defense-related freight. Gone were the boxcars, scrapped in favor of flatcars to carry vehicles and containers. The face of military rail shipments in 2006 bore little resemblance to their distant 1946 cousins. With these changes came risk in various forms. These forms included the military competing with commercial traffic for railcars and containers, an aging physical plant at military installations, main line railroad capacity constraints, and port congestion.

The competition between the railroads and the trucking and airline industries changed greatly during this period. Intercity passenger service, despite the best efforts of Amtrak, remained unprofitable, and never again attracted the military for any significant movement of personnel. Airlines owned this market despite all of the security concerns of the early 2000s. Intermodal containers and flatcars supplanted boxcars for moving military freight, in particular ammunition. The railroad and trucking industries achieved a degree of interdependence with this intermodal arrangement, and the military relied upon this relationship in support of mobilization operations. Despite this flexibility, the availability of qualified truck drivers and certified containers vied with the available of

flatcars as the more significant issue for Installation Transportation Officers seeking to fulfill military requirements at this point in history.

The declining physical condition of the railroad industry for the most part reversed, especially for the larger railroads, but not for the military. Programs funded in the late 1980s to rebuild the rail infrastructure saw monies diverted, resulting in problems for the Army in support of Operations Desert Shield and Desert Storm. Similar efforts in the 1990s witnessed comparable limited progress. Despite the preservation of the strategic railroad network, the first strategic surface rail mile on each post remained the most vulnerable for the military. These conditions vied for the attention of the Department of Defense whose actions during this time clearly focused money and efforts on strategic air and sealift. Domestic surface movement by rail seemed almost a given in planning scenarios.

Port facilities identified for mobilization shared similar infrastructure problems. The redeeming quality for most of the civilian ports was the fact that increased container traffic allowed for upgraded facilities in order to improve efficiency. Military ports, particularly those dedicated to ammunition loading, saw relatively fewer improvements despite the shift from boxcars to containers. Given the nature of this class of supply, the increase in risk for the military was significantly larger. Adding to this risk was the increased capacity constraints of the late 2000s as container traffic with Asia soared. Pushing military vehicles containers through congested ports competed with valuable commercial traffic. With ports strained to accommodate increased traffic, the net effect on the rail network negatively affected other traffic. Despite increased capital outlays in the 2000s for upgrading main lines with longer sidings, or adding a second main line on

some routes, capacity constraints continued. For the military, fortunately, the actual mobilization efforts in support of Operation Iraqi Freedom, for example, bore little resemblance to the ones planned. The railroad industry, supported in part by trucks, met the demand to date.

Like a phoenix, the rail industry of 2006 successfully rose from the ashes of the implosion that began in the early 1960s. This period witnessed the culminating point for the decline of the railroads as the industry avoided collapse in the 1970s and began to compete more effectively in the early 1980s and beyond. The same was not true for the military. The efforts employed to preserve strategic surface rail movement during this period failed to address adequately the aging physical plant or the pending shortage of railcars usable by the military. Operation Iraqi Freedom, as an example of capabilities in action, never truly tested the limits of the military to mobilize quickly using the railroads on a significant scale. At the end of this period in 2006, the overall risk remained great for the military to employ domestic railroads in support of major operational requirements.

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<sup>1</sup>United States General Accounting Office, Report to the Chairman, Subcommittee on Readiness, Committee on Armed Services, House of Representatives, *Army Deployment: Better Transportation Planning Is Needed* (Washington, DC: United States General Accounting Office, June 1987), 2-4, GAO/NSAID-87-138.

<sup>2</sup>United States Transportation Command, "United States Transportation Command: A Short History," USTRANSCOM Research Center [article on-line]; available from <http://www.transcom.mil/history/history.html>; Internet; accessed 4 June 2006.

<sup>3</sup>Association of the United States Army, "Strategic Mobility: Getting There Is The Big Problem?" (Arlington, VA: Association of the United States Army, 1989), 6-7.

<sup>4</sup>United States General Accounting Office, Report to the Chairman, Subcommittee on Readiness, Committee on Armed Services, House of Representatives,

*Operation Desert Shield: Problems in Deploying by Rail Need Attention* (Washington, DC: United States General Accounting Office, November 1992), 14-19, GAO/NSAID-93-30.

<sup>5</sup>Ibid., 14-18.

<sup>6</sup>Ibid., 18-19.

<sup>7</sup>James K. Matthews and Cora J. Holt, *So Many, So Much, So Far, So Fast: United States Transportation Command and Strategic Deployment for Operation Desert Shield/Desert Storm*, (Washington, DC: United States Government Printing Office, 1996), 171.

<sup>8</sup>John A. Watkins, "Rail support of military operations," *Army Logistian* 29, no. 1 (January-February 1997): 4-5. For the identification of the locations of the offices cited, see John H. Horvath, "Uncle Sam wants UTU Members!" [United Transportation Union website]; available from <http://www.utu.org/depts/pr-dept/NEWS/NEWS99/UncleSam.htm>; Internet; accessed 11 October 2006.

<sup>9</sup>United States Department of Defense, Joint Chiefs of Staff, *Mobility Requirements Study (U)* (Washington, DC: Joint Chiefs of Staff, 23 January 1992), VII-2-VII-4. This study did not explicitly state that boxcars were less preferred. Rather, the study emphasized the benefits of twenty-foot intermodal containers with regard to strategic shipping. The decreased use of boxcars was a result of the shift in mode. The context of the study was ammunition movement from depots to ports to theater.

<sup>10</sup>Surface Deployment and Distribution Command, "Brief History of SDDC;" available from <http://www.sddc.army.mil/Public/Home/About%20SDDC/History.html>; Internet; accessed 28 March 2006.

<sup>11</sup>United States General Accounting Office, Report to the Chairman, Subcommittee on Readiness, Committee on Armed Services, House of Representatives, *Operation Desert Shield: Problems in Deploying by Rail Need Attention* (Washington, DC: United States General Accounting Office, November 1992.), 3-5, GAO/NSAID-93-30.

<sup>12</sup>Robert S. Korpany, "Preserving Strategic Rail Mobility," *Army Logistian* 31, no. 6 (November-December 1999): 36-39.

<sup>13</sup>Richard Saunders Jr., *Main Lines: Rebirth of the North American Railroads, 1970-2002* (DeKalb, IL: Northern Illinois University Press, 2003), 308-312.

<sup>14</sup>Ibid., 329-336.

<sup>15</sup>Military Traffic Management Command, Transportation Engineering Agency, *Strategic Rail Corridor Network (STRACNET) and Defense Connector Lines*. (Newport

News, VA: Military Traffic Management Command, Transportation Engineering Agency, December 1998), 11-13.

<sup>16</sup>Don Phillips, "An Interstate Railroad System – alias STRACNET," *Trains*, April 1982, 14. Contains 1981 mileage numbers. For 1998 mileage numbers reference, see the previous endnote.

<sup>17</sup>Military Traffic Management Command, Transportation Engineering Agency, *Strategic Rail Corridor Network (STRACNET) and Defense Connector Lines*: 20.

<sup>18</sup>Watkins, 4-5.

<sup>19</sup>Thomas J. Slattery, "Ammunition Logistics for Operation Noble Anvil," *Army Logistician* 32, no. 2 (March–April 2000): 52-55.

<sup>20</sup>Korpanty, 36-39.

<sup>21</sup>Dwight C. Sones, "Can the Rail Industries Flatcar Inventory Support Two Major Theater Wars?" (Graduate Research Paper, Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, June 2000), 26, AFIT/GMO/END/00E-11.

<sup>22</sup>"Going to War on the Rails," *Army Logistician* 32, no. 5 (September-October 2000): 34-35.

<sup>23</sup>United States Department of Transportation, Surface Transportation Board, Decision, "TTX Company, et al. – Application for Approval of Pooling of Car Service with Respect to Flatcars," STB Finance Docket no. 27590 (Sub-No. 3) (Washington, DC, 31 August 2004), 5-7.

<sup>24</sup>Military Traffic Management Command, Transportation Engineering Agency, *Department of Defense Interface Standard for Transportability Criteria* (18 December 1998), 18-19, MIL-STD-1366D.

<sup>25</sup>Bob Honea, "U.S. Military Preparedness – Jammed in Traffic," *TR News* 211, (November-December 2000): 23.

<sup>26</sup>Sones, 28.

<sup>27</sup>Ibid., 33-66.

<sup>28</sup>Honea, 19.

<sup>29</sup>Ibid., 20.

<sup>30</sup>Ibid., 23.

<sup>31</sup>William C. Gibson, "Strategic Rail Transportation: Deployment Issues and Challenges Facing a Transformation Army Today and Tomorrow" (Carlisle Barracks, PA: United States Army War College, 4 December 2004.), 11.

<sup>32</sup>Ted Smith-Peterson, "The Spigot: How Commerce Flows from Southern California Ports onto U.S. Rails," *Trains*, September 2006, 31.

<sup>33</sup>Gibson, 12.

<sup>34</sup>James Beatty, Terry Beynon, Denise Cavanaugh, Dan Clark, Earl Hampton, K.C. Jones, George Lembrick, Joel Malone, Kevin Moore, Darrell Mosley, Michael Naylor, Mohsen Parhizkar, Ricardo Salas, Sanusi Samion, Simon Schuchat, and Peter Taylor, "Transportation" (Industrial College of the Armed Forces, Washington, DC, spring 2003), 10.

<sup>35</sup>Gibson, 12.

<sup>36</sup>Military Traffic Management Command, Transportation Engineering Agency, *Strategic Rail Corridor Network (STRACNET) and Defense Connector Lines* (Newport News, VA: Military Traffic Management Command, Transportation Engineering Agency, September 2003), 13.

<sup>37</sup>Surface Deployment and Distribution Command, "Brief History of SDDC" [on-line document] available from <http://www.sddc.army.mil/Public/Home/AboutSDDC/History.html>; Internet; accessed 28 March 2006.

<sup>38</sup>Gibson, 1.

<sup>39</sup>Ibid., 2-15.

<sup>40</sup>Smith-Peterson, 35-41.

<sup>41</sup>Luther S. Miller, "Can Intermodal Ease the Squeeze?" *Railway Age*, August 2006, 23.

## CHAPTER 5

### CONCLUSION

Since World War II, the capability of the United States military experienced drastic changes with regard to the employment of domestic railroads. Numerous events altered the ability of the military to use rail in the movement of personnel and equipment. While not all of these changes happened quickly over the sixty years examined, the summation of the incremental risk posed by the degradation of the railroad-related organizations, infrastructure, and capital equipment was significant. While the railroads generally recovered from their near ruin in the late 1960s and early 1970s, the military capability continued to degrade. Only the successful intervention of certain entities in government, industry, and the military prevented a complete collapse of this means of military transport during this period.

The key changes that drove the increase or decrease in incremental risk varied from increased competition and financial pressure, to regulatory reform and technical innovation. Trucks and airlines offered some of the most visible means of competition that diverted traffic from rail. Poor financial operating ratios, implying an increased risk to investor capital, drove away investment in railroads. Government oversight of railroad company requests for service changes in the forms of mergers and abandonment stopped the disruption of service to vital defense installations. The military efforts to manage the force saw all of the rail-related experience relegated to the reserves in the 1970s. Containerization changed the landscape for the military as the less-efficient boxcar gave way to the container-on-flat-car mode of transport. While not all of these changes

adversely affected the capability of the military to use railroads, the negative developments outweighed the positive ones.

Some of the most significant changes in the rail industry came because of direct competition from other transport venues. Trucks, buses, airlines, barges, and pipelines all negatively affected railroad financials. Large fixed costs worked against the railroad industry, while the competitors benefited from government subsidies, public attention, and corporate railroad ignorance. With the advent of passenger air travel from commercial airports paid for or subsidized by various governments, the rationale for railroads to continue to invest heavily in new passenger equipment made little sense. With over-the-road trucks traveling public highways, the burden of private rights-of-way incurring property tax revenue was almost too much to endure financially. Driven to moving commodities, decreased boxcar service to the average company was inadequate to sustain more than a few railroads. This movement to commodities also hurt the military given the nature of the equipment required to move tracked vehicles and ammunition, until containerization became widespread at least for the latter. While pooling of railcars alleviated some military concerns, the availability of assets became subject to market pressures. The military of 2006 continued to suffer concern over this matter with little financial incentive to offer the rail industry to ease the worry.

The performance of railroads during this period drove their financials investment away from infrastructure maintenance. Union labor demands also competed with infrastructure expenses and capital equipment purchases. Unfortunately, the military matched the railroad physical degradation that occurred in the decades after World War II. Little investment in the infrastructure of defense installations and military posts meant

that, even after the railroads recovered and resumed maintenance, the military did not. The poor performance by military units mobilizing for Operation Desert Shield stood in testament of these deferred priorities. The corporate profitability required to maintain large plants came to the railroads only after the deregulation of the Staggers Act. The military, on the other hand, continued to shift much of the money appropriated over the years to repair the military infrastructure in order to meet mobilization needs to other, more pressing concerns. These actions further raised the risk to capabilities.

On a positive note, the United States government implemented various forms of oversight since 1946 to preserve service in the interest of national defense. These actions lowered some of the risk for the military. Some of these activities actively worked with railroad industry management to ensure economic decisions taken by certain regulatory bodies balanced defense needs against the profitability of a company. As a case in point, the Surface Transportation Board abandonment procedures continued to require involvement of the Surface Deployment and Distribution Command to ensure the integrity of the Strategic Rail Corridor Network. The General Accounting Office also continued to monitor the status and viability of rail support for the military. Despite the reduction in risk for the military provided by these oversight actions, the magnitude of the other risk increases dwarfed this mitigation.

Contributing incrementally more risk, the ability of the military to intervene in commercial railroad operations diminished greatly. The operational ability of the military services to seize, manage, coordinate, or to otherwise control a commercial railroad, much less the domestic industry, effectively ended with the transfer of the remaining few active military units with railroad-related skills to the reserves. With this action, the very

nature of the United States government approach to breaking strikes ceased, instead replaced by appeals to avoid national economic damage. Gone, since the early 1970s, was the talent and experience required to “run the trains.” The military forces had no active capabilities left. Furthermore, in 2006, with the advancement in technology and the prerequisite training to use it, no United States government agency was now prepared to accept a railroad strikebreaking mission. Presidents now required other means to end paralyzing strikes by railroad unions. Proposing to activate reservists to help mobilize the country was one thing, but breaking strikes was something entirely different.

Technology changes also contributed a net increase in risk for the military. While certainly the innovations that enabled the retirement of boxcars in lieu of containers reduced risk for the military in some areas, the risk increased in others. Without doubt, the innovation from boxcar to container was an important step that allowed the military to leverage commercial transport for greater speed in movement; however, the delay in supporting infrastructure to best support containerization hurt the overall effort. Added to the constrained container facilities problem was the shrinking specialized flatcar pool. The military of the late 1990s found itself competing with commercial industry for limited assets to move supplies and equipment in operational surges. With this change to containers, break bulk boxcar handling capability diminished. This diminished capability meant that any operational plans to employ shipping where no container handling existed were now at risk.

To aid in understanding the risk to military capabilities with regard to the domestic railroads discussed thus far, each scenario noted fell into one of five areas of jeopardy. These areas included:

1. Risk in inadequate local service
2. Risk in inadequate railcar availability
3. Risk in the poor conditions of the first strategic railroad mile
4. Risk in inadequately skilled people
5. Risk in limited capacity of the railroads

These five areas of risk accounted for most of the topics covered by this thesis. What this risk meant in terms of military capability varied from potentially increased lead-times and costs, to delayed mobilization, from increased wear on equipment, to possible derailments.

The military risk associated with inadequate service to defense installations first surfaced in the 1960s with the abandonment activities that resulted from the various bankruptcies and mergers. What this meant to the military was that decreased competition in rail service providers threatened fort-to-port movement with increased lead times and additional cost. By the late 1970s, this risk peaked for the military with the actions by the United States government to counter the collapse of rail service in the northeast part of the country. Further actions taken by the Military Traffic Management Command as part of the Interstate Commerce Commission Review process in the 1980s reduced this risk slightly. Since then, the Strategic Rail Corridor Network efforts kept this risk from increasing, but did not eliminate it.

The military risk of inadequate railcar availability existed throughout the period in question. The issue worsened during times of mobilization, such as during the Korean War and Operation Desert Storm, but lessened some in the mid-1950s with the procurement of government-owned railcars. Since that time, this risk has increased

gradually as the assets purchased by the government reached the end of their service lives. By the 1990s, the risk associated railcar requirements peaked as material formerly shipped by boxcars, namely ammunition, shifted to containers that required additional flatcars from a population already constrained. In the early 2000s, this risk reduced slightly, but remained significant, as the commercial industry expanded capacity to meet the growing demand from business.

The military risk related to the poor conditions of the first strategic railroad mile grew out of decades of deferred maintenance. Even in the late 1940s, much of the domestic military rail infrastructure pre-dated World War I. Going into the 1960s, the rails and bridges saw less service as some of the freight and passenger movement began to shift to other forms of transport. By the 1970s, with much of the defense rail infrastructure well past service life, the capacity to maintain the tracks and loading ramps using military service railroad support units decreased as these units deactivated or shifted to the reserves. The Department of Defense attempted to reduce some of the risk in the 1980s with maintenance plans, but funding shifts precluded meaningful accomplishment of the tasks required. By the 1990s, the risk became reality for some units attempting to load out by rail in support of Operations Desert Shield and Desert Storm. The risk remained high through the 1990s even as additional maintenance plans focused on the track conditions of only selective installations. By the 2000s, with some of the planned maintenance accomplished, this risk decreased slightly.

The risk attributed to inadequately skilled people, though not unique to the military or the railroads, diminished during this period. In particular, railroad-related skills to support military requirements atrophied and perished over time. The efforts in

the 1950s to consolidated rail support under a joint command removed some duplication of labor, thus affected the experience pool. Further cuts in labor due to technological innovation in locomotives, from steam to diesel, and track maintenance further reduced the pool of trained people in the 1950s and 1960s. The deactivation of active duty military units related to railroading further increased this risk in the 1970s. By the 1980s, only small numbers of people in the Department of Defense, relative to the late 1940s, possessed the knowledge required to employ railroads effectively in support of military requirements. This risk continued into the 1990s and 2000s and presented challenges for Installation Transportation Officers in their attempts to move units by rail in support of operational requirements, in particular Operations Desert Shield and Desert Storm and Operation Iraqi Freedom.

The last military risk proffered relates to commercial capacity constraints. This risk accounted for little significance until the railroads began to rebound from the industry slump in the early 1980s. By that time, most excess capacity in the network was gone through mergers and abandonment. The commerce of the 1990s, coupled with the increase in imports and continued merger activity, increased this military risk. By the 2000s, the risk to the military to be able to surge vehicles and material in support of operational requirements was significant. By 2006, many railroad main lines and seaports operated at capacity with little room to grow. This risk remained one of the most significant of the five discussed.

With these military risks in mind, recommendations to mitigate them considered during the review of the research for this thesis included several possible actions by the railroads, the Departments of Defense and Transportation, and the United States

Congress. Some of the measures considered related to people and organizations while the remainder required money for infrastructure and capital equipment. They included:

1. Treat rail movement as a strategic commodity under the Department of Defense Surface Deployment and Distribution Command, on par with peer commands such as the Military Sealift Command, with permanent liaison officers based at each Installation Transportation Office requiring rail
2. Continue Surface Deployment and Distribution Command efforts at the Surface Transportation Board to review requests for mergers and abandonment with regard to military interests
3. Establish Surface Deployment and Distribution Command military liaison officers with the ten largest domestic railroads to coordinate any mobilization efforts
4. Increase the equipment available in Defense Freight Railway Interchange Fleet, especially container and heavy-duty flatcars, through purchase or lease in order to maintain sufficient quantities to meet initial mobilization surge requirements
5. Continue, through Congress, to invest in upgrades for rail infrastructure at defense installations, industries, and ports with missions requiring use of rail
6. Establish a financial mechanism like a “hedge fund,” through Congress and managed by the Department of Transportation, for twenty-foot ammunition containers and commercial flatcars to insure adequate availability when needed most
7. Create an incentive structure through Congress and managed by the Department of Transportation to increase rail capacity and maintain vital rail network lines and connections to insure important defense installations preserve their rail capabilities

With these mitigating recommendations considered, a reduction in military risk associated with the historical degradation of domestic railroad and associated military capability might be possible.

Shortly after World War II, the President of the Association of American Railroads, Mr. William T. Faricy, spoke to the faculty and staff of the Industrial College of the Armed Forces. He said,

If there are only two things that you remember from what I say today – just two and nothing else – let it be [these two]. Come World War III, those of you who will have something to do with rail transportation, stand by that system whereby only one office issues priority orders; and see to it before anything else is loaded into a freight car that there is assurance it can be unloaded when it gets to its destination. Do just those two things and you will make the greatest contribution, those of you who will deal with transportation, [that] you can possibly make in handling the domestic rail situation if we have a third world war.<sup>1</sup>

The military and railroads of 1949 faced numerous challenges and uncertainty. The railroads and military of 2006 greatly resembled their ancestors in this manner. Whether all of the problems of transporters beyond 2006 will be so simple as to be boiled down to just a few like the two cited by Mr. Faricy back then is now left to future historians to decide.

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<sup>1</sup>William T. Faricy, "Wartime Problems of the Domestic Railroads" (Lecture, Industrial College of the Armed Forces, Washington, DC, 28 November 1949).

## GLOSSARY

**Boxcar.** A freight rail car with enclosed sides and ends, covered with a roof, with doors located on the side walls used to transport items susceptible to damage from weather or other effects, such as household goods.

**Common carrier.** A transportation company that offers services to the general public.

**Damage-free.** A type of boxcar with added features to secure freight or dampen shocks while in transit.

**Door-to-door.** A type of service that accepts and delivers goods directly from a supplier to a business.

**Flatcar.** A freight rail car with a metal or wood deck used to transport large items not usually susceptible to damage from weather or other effects, such as tracked vehicles.

**Gondola.** A freight rail car with an open top, low sides and ends, used to transport heavy bulk items, such as scrap metal.

**Hopper car.** A freight rail car with used to carry bulk goods like grain, coal, or ballast. Some types of hopper cars have an open top, with high sides and ends, while others are completely covered.

**Less-than-carload.** A shipment that utilizes less than one freight car or truck.

**Operating ratio.** A financial ratio that measures how well a company uses its resources to produce sales.

**Over-the-road.** A truck used to transport goods from one location to another over public highways.

**Tank car.** A freight rail car with a large cylindrical container that carries liquids or gasses.

**Through freight.** A train operating from one terminal to another without stopping to pick up or set out rail cars.

**Way freight.** A train operating on a line that stops to pick up or set out rail cars.

**Well car.** A freight rail car with a depressed center deck, usually metal, used to transport very large items, such as major ship components or power plant equipment.

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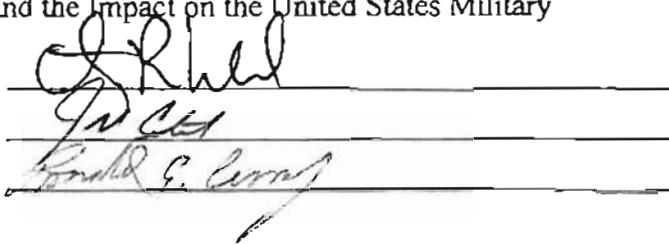
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